Office of River Protection

Office of River Protection
Integrated Safety Management System Description

DOE/RL-98-69
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Signature Page

Richard R. French, Manager Date
Office of River Protection (ORP)

Jon C. Peschong, Director Date
Management Systems Office

Jackson E. Kinzer, Assistant Manager Date
Office of Assistant Manager for
Tank Waste Storage and Retrieval (AMSR)

James A. Poppiti, Director Date
Program Development Division (PDD)

Dana C. Bryson, Director Date
Operations Program Division (OPD)

Ami B. Sidpara, Director Date
Tank Farm Oversight Division (TOD)

Joseph D. Voice, Acting Director Date
Technical Support Division (TSD)

EXECUTIVE SUMMARY

Fifty-four million gallons of high-level radioactive waste are stored in deteriorating tanks at the Hanford Site in Washington State. These tank wastes threaten the Columbia River, the lifeblood of much of the Pacific Northwest, and must be dealt with before more waste leaks to the soil and the groundwater. Cleanup of this waste is the largest and most complex environmental project facing the U.S. Department of Energy.

As directed by Congress in Section 3139 of the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999, the Department of Energy has established the Office of River Protection. The Office of River Protection is responsible for managing all aspects of the Tank Waste Remediation System (TWRS), including the "privatized" contract treating and immobilizing the tank waste, and the non-privatized operations, maintenance, engineering, and construction activities in the tank farms. The Office of River Protection (ORP) was established in 1999. ORP's predecessor was the DOE Richland Operations Office (RL) Tank Waste Remediation System (TWRS) which was the organization in place during the Integrated Safety Management System Phase I Verification in October, 1998.

Integrated Safety Management (ISM) has been a key focus of the Tank Waste Remediation System (TWRS) since the TWRS program inception. Numerous safety challenges confronted TWRS when it was formally established in 1991. In 1993, the Secretary of Energy defined six safety initiatives that required the completion of 41 actions. The six Secretarial safety initiatives were identified for accelerating resolution of long-standing waste tank safety issues and closure of Unreviewed Safety Questions (USQs).

These initiatives included:

-improving tank farm worker safety and conduct of operations
-accelerating resolution of safety issues
-characterizing tank wastes
-upgrading tank farms infrastructure
-reducing safety and environmental risk from tank leaks
-accelerating retrieval of high-heat tank 106-C

Of these, all but 3 of the 41 actions have been completed. The effort to close these Secretarial Initiatives has resulted in major advances to the management of safety within TWRS. Specifically: (1) completion of the TWRS Environmental Impact Statement; (2) introduction of an innovative business system which balances technical environmental, safety and health (ES&H) risk with cost and schedule risks; (3) completion of an RL TWRS staffing analysis; (4) achievement of RL TWRS training and qualification goals for RL TWRS management and technical staff in accordance with the Defense Nuclear Facilities Safety Board

(DNFSB) Recommendation 93-3; (5) implementation of TWRS Authorization Agreement through the Project Hanford Management Contract (PHMC); (6) implementation of an integrated, consolidated TWRS Basis for Interim Operations (BIO) and approved Final Safety Analysis Report (F/SAR); (7) establishment of a mature Facility Representative Program; and (8) completion of the Integrated Safety Management System Phase I Verification in October, 1998.

The new Office of River Protection Management Team is committed to completing the TWRS mission while:

- Protecting the public, the worker, and the environment
- Institutionalizing and implementing Integrated Safety Management at all levels, and
- Completing ISMS Phase II Verification

With the recent establishment of the Office of River Protection, a period of transition, re-establishment, and mission realignment have begun. The RL TWRS Integrated Safety Management System Description (DOE/RL-98-69), that was used during the ISMS Phase I Verification has been revised to reflect the establishment of the Office of River Protection. It is expected; however, that additional changes will occur as ORP proceeds through a systematic Project Strategic System Execution Plan (SSEP) which will encompass the Project Strategic Approach, Baseline Management Systems, and Work Management. The principles and core functions and remaining gaps of the Integrated Safety Management System are incorporated into this Plan.

DOE/RL-98-63
June 30, 1999
Rev. 1

OFFICE OF RIVER PROTECTION
POLICY STATEMENT
ENVIRONMENT, SAFETY, AND HEALTH

It is and will remain our policy that the safety of our workers, respect for the environment, and the public health are paramount in all that we do. To meet the River Protection Project strategic goals and objectives we must integrate safety into all of our work. We must demand outstanding environmental, safety, and health performance and accountability of ourselves, our contractors, and our projects because at stake are nothing less than the lives and livelihood of our fellow workers, our neighbors, and a healthy environment to leave to our children.

It is our firm belief that this will be achieved through implementing and adhering to the Secretary of Energy's Policy on Safety Management Systems, DOE P 450.4. All River Protection Project staff must accept as their responsibility a concerted and sustained effort to achieve Integrated Safety Management in all the projects and work we do. We will hold Office of River Protection staff and contractors accountable for safety performance results because meaningful worker involvement requires each employee working on the River Protection Project be held accountable for his or her safety performance.

The fundamental premise of Integrated Safety Management is that all accidents and incidents are preventable through close attention to project design and hazard control, and with substantial competent worker involvement in teams that plan work, select appropriate safety standards, and implement necessary controls. Years of experience has demonstrated that an investment in prevention brings not only a healthier workplace and a cleaner environment, but cost-savings as problems are addressed before they become costly incidents or accidents.

The Office of River Protection Management Team supports a work environment that allows free and open expression of safety concerns and where River Protection Project staff and workers fear no reprisals or retaliation. River Protection Project staff and workers are our most important resource for identifying hazards, implementing controls, and correcting potentially unsafe work practices.

The Office of River Protection is committed to institutionalizing, implementing, and continuously improving Integrated Safety Management, which will result in improved environmental, safety, and health performance. We will systematically integrate environment, safety, and health into the management and work practices at all levels to accomplish the River Protection Project mission while protecting the public, the worker, and the environment.

Richard T. French 7/6/99

Richard T. French, Manager Date
Office of River Protection (ORP)

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1.0 INTRODUCTION

1.1 PURPOSE

The purpose of this document is to describe the Department of Energy's Office of River Protection (DOE-ORP) approach to integrate Environment, Safety, and Health (ES&H) requirements and controls into the process of planning and conducting work to effectively protect the workers, the public, and the environment. The *ORP Integrated Safety Management (ISM) System Description* supports the U.S. Department of Energy's (DOE's) *Hanford Strategic Plan* (DOE/RL–96-02) to safely cleanup and manage the Hanford Site's legacy waste and deploy science and technology while incorporating the fundamental goal to *Do Work Safely and Protect Human Health and the Environment*. In addition, it directly implements DOE P 450.4, *Safety Management System Policy* and supports DOE P 450.6, Secretarial Policy on Environment, Safety, and Health and the RLPD 450.1, *Hanford Environment, Safety, and Health Policy*.

The *ORP ISM System Description* is instrumental in implementing DOE P 411.1, *Safety Management Functions, Responsibilities, and Authorities Policy* .

ORP carries out the requirements of integrated safety management via a comprehensive, non-overlapping set of laws, rules, policies, instruction, agreements, understanding, and contracts focused to accomplish the RPP mission safely.

The *ORP ISM System Description* is designed to encompass the seven guiding principles and five core functions defined in DOE P 450.4. The seven guiding principles are described in greater detail in Section 2.0 and are:

- Principle 1: Line management responsibility for safety
- Principle2: Clear ES&H roles and responsibilities
- Principle 3: Competence commensurate with responsibilities
- Principle 4: Balanced priorities
- Principle 5: Identification of ES&H standards and requirements
- Principle 6: Hazard controls tailored to work being performed
- Principle 7: Operations authorization

The five core functions provide the necessary structure for any work activity that supports the guiding principles and that could potentially affect the workers, the public, or the environment. These core functions are applied as a continuous ES&H management cycle. These core functions are described in greater detail in Section 3, and are:

- Define the scope of work
- Identify and analyze hazards associated with the work

- Develop and implement hazard controls
- Perform work within controls
- Provide feedback on adequacy of controls and continue to improve safety management

ORP business management systems are designed to be fully integrated with ES&H management systems and form the ORP ISMS. This design assures continuous coupling of ES&H considerations in the planning and execution of the RPP mission. The *ORP ISM System Description*; therefore, provides an integrated requirements/risk based approach to safety during the conduct of RPP activities and work processes.

1.2 OVERVIEW

Finding safe and environmentally sound methods of storage and disposal of 54 million gallons of highly radioactive waste contained in 177 underground tanks is the largest challenge of Hanford cleanup. TWRS was established in 1991 and continues to integrate all aspects of the treatment and management of the high-level radioactive waste tanks.

In fiscal Year 1997, program objectives were advanced in a number of areas. RL TWRS refocused the program toward retrieving, treating, and immobilizing the tank wastes, while maintaining safety as first priority. Moving from a mode of storing the wastes to getting the waste out of the tanks will provide the greatest cleanup return on the investment and eliminate costly mortgage continuance.

There were a number of safety-related achievements in FY1997. The first high priority safety issue was resolved with the removal of 16 tanks from the "Wyden Watch List". The list, brought forward by Senator Ron Wyden of Oregon, identified various Hanford safety issues needing attention. One of these issues was ferrocyanide, a chemical present in 24 tanks. Although ferrocyanide can ignite at high temperature, analysis found that the chemical has decomposed into harmless compounds and is no longer a concern.

Additionally, the first tank farms F/SAR was approved in March, 1999. Implementation of the F/SAR is intended to be completed by September 30, 1999.

Another safety-related accomplishment was achieved with the establishment of the first TWRS "comprehensive safety basis, referred to as the TWRS Basis for Interim Operations (BIO)," a plan for identifying work hazards and linking them to safety. In the field, the RPP contractor, Fluor Daniel Hanford (FDH) and its subcontractors, Lockheed Martin Hanford Corporation (LMHC), Duke Engineering Services, and Numatec continued making progress by completing the 6.2 mile Cross-Site Transfer Line ahead of schedule. The pipeline and pumping system allows the safe transfer of liquid wastes and some solids from

tanks in the 200 West Area to privatized treatment facilities in the 200 East Area. It also provides a means for moving waste from the Site's single-shell tanks to more durable double-shell tanks as a means of interim stabilization of single-shell tanks. Interim Stabilization is a top priority for TWRS since 67 single-shell tanks are suspected leakers.

By applying ISM principles, LMHC has also made significant progress in reducing sludge waste in the high heat tank C-106. Approximately 52" of sludge waste has been successfully transferred to tank AY-102 in an effort to reduce the heat load and reduce the high heat hazards.

In addition to the challenges related to the treatment and immobilization of the tank wastes, issues still exist with the safe storage of the waste. The RPP program has committed to the early resolution of the flammable gas (buildup of hydrogen gas in the wastes) and organics (potential for organic nitrate reaction) safety issues in the tanks. These two issues are on track for closure in Fiscal Year 1999.

1.3 DOE's ISMS ROLE

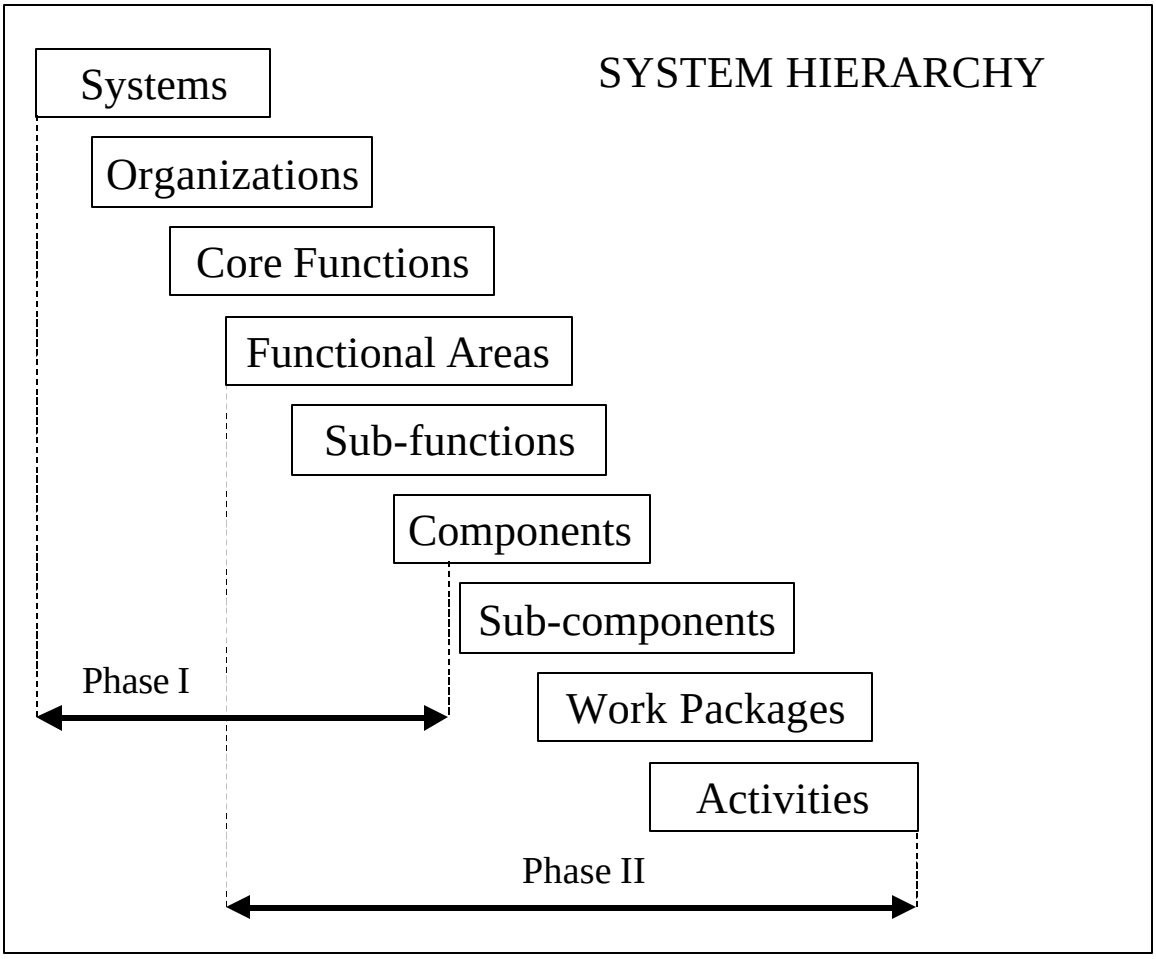
The ultimate responsibility and accountability for assuring adequate protection in the operation of ORP facilities rests with DOE line management. ORP has the responsibility to ensure that the operations at its facilities are conducted safely. RPP operations must be performed in a manner that provides reasonable assurance that workers, the public, and the environment are adequately protected. Where contractors are employed to plan and conduct work at RPP facilities ORP line management fulfills this responsibility by establishing expectations, contractual requirements, overseeing compliance, and managing contracts. These activities include: developing and applying environment, safety, and health requirements; providing guidance for the development of contractor safety management systems; providing technical direction; approving bases for operations; assessing contractor performance against established requirements; and analyzing and feeding back operational information to improve operations. DOE's safety management functions, responsibilities, and authorities for ensuring adequate protection and safe operations cannot be delegated to contractors.

1.4 SYSTEM ARCHITECTURE

The System Architecture allows the flow of policies and ES&H requirements to flow from the corporate level (DOE Headquarters and Regulators) to the Hanford Site (ORP) where the policies and requirements are organized through the approved *Project Hanford Management Contract Integrated Environmental, Safety and Health Management System Plan*, 97-ESH-040. RPP contractors then translate the ES&H requirements through work packages and procedures to the Project activity/task level.

The Integrated Safety Management System (ISMS) is the structure that allows the management, integration, and implementation of ES&H requirements through a hierarchial structure comprised of: (1) systems; (2) organizations; (3) core functions; (4) DOE and contractor functional areas; (5) subfunctions or subelements; (6) components; (7) subcomponents; (8) work packages; and activities as illustrated in Figure 1.

Figure: 1 ISMS Hierarchy



The ORP and contractor ISM Systems are subdivided according to five core functions (Section 3) that are described in the DOE P 450.4 to manage ES&H requirements. These include: (1) Define Work; (2) Analyze Hazards; (3) Develop and Implement Controls; (4) Perform Work; and (5) Feedback.

The Core Function is the level at which the Mission, the Multi-Year Work Plan, the Authorization Agreement, and the Program Execution guidance are formulated by ORP and executed by the RPP contractors.

The Core functions of the ISMS Policy, in turn, are further subdivided into functional areas according to the DOE "Functions, Responsibilities, and Authorities Manual" and the twenty contractor functional areas in the Systems/Requirements Identification Document (WHC-SD-MP-S/RID-001, Revision 1-B). The functional areas are further subdivided into sub-functions or sub-elements in the contractor S/RID. For example, Configuration Management (CF 4) is further subdivided into: (1) management and administration; (2) technical baseline; and (3) change control.

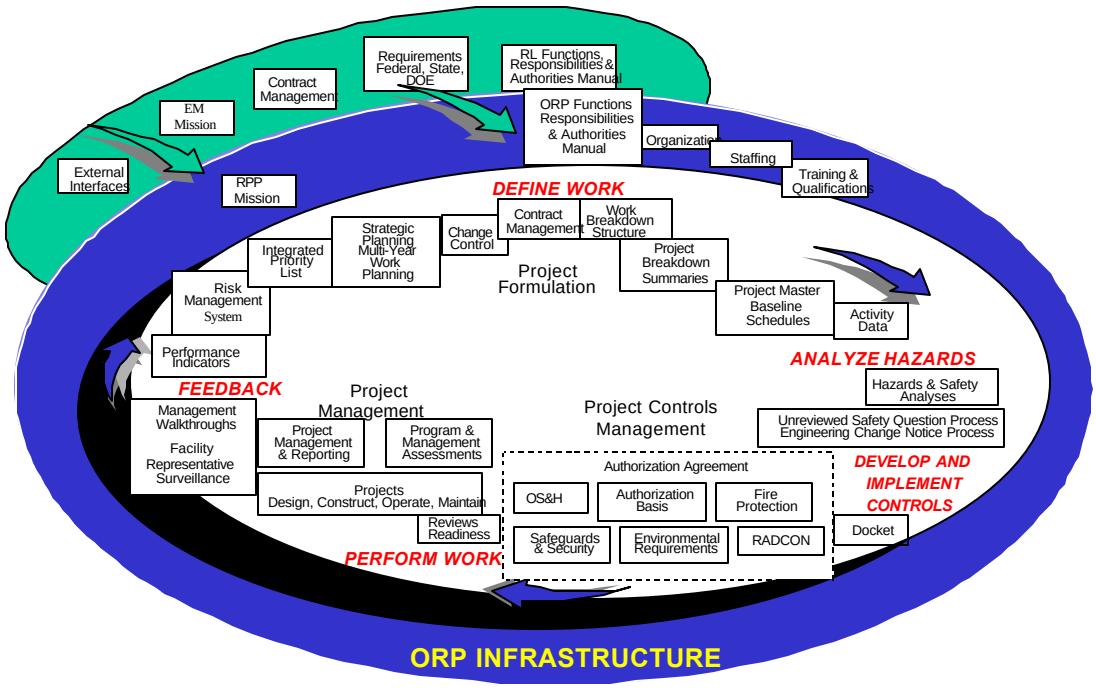
The sub-functions are further divided into components. For example, the "management and administration" (sub-function) of Quality Assurance (functional area) is managed through a Quality Assurance Plan Description (component).

2.0 DOE OFFICE OF RIVER PROTECTION (ORP) ISMS INFRASTRUCTURE

DOE Headquarters (DOE HQ) and the DOE Office of River Protection (ORP) provide the infrastructural support to the RPP to carry out their mission within the guiding principles of ISMS. Then in turn, the infrastructure support provides the mission definition, strategic planning, and budget authorization to execute the mission.

The RPP mission is conveyed through the ORP Manager via specific assignment of functions, responsibilities, and authorities through the "Functions, Responsibilities, and Authorities Manual" (FRAM). The FRAM indicates how the applicable federal and state requirements and DOE Orders are to be applied to site projects including RPP. Similarly, DOE conveys the applicable requirements to site contractors through the Project Hanford Management Contract (PHMC).

Figure 2: ORP ISM System Description Infrastructure



The RPP mission flows from the Hanford Strategic Plan (HSP). ORP Management provides the organization and assures that the tasks are filled by personnel with the necessary skill mix and qualifications. This Section provides an overview of the infrastructure as illustrated in Figure 2 that supports the RPP mission and demonstrates how that infrastructure fulfills the ISMS Guiding Principles.

2.1 DOE RL MISSION AND STRATEGIC PLAN

According to DOE Policy 450.4, *DOE Safety Management System Policy*, ***the Department and Contractors must systematically integrate safety into management and work practices at all levels so that missions are***

accomplished while protecting the public, the worker, and the environment. This is to be accomplished through effective integration of safety management into all facet of work planning and execution. In other words, the overall management of safety functions and activities becomes an integral part of mission accomplishment.

The DOE RL Hanford Strategic Plan (DOE/RL-96-92) DEFINES Hanford's Mission in two key parts:

> **Hanford's missions are to safety cleanup and manage the site's legacy wastes, and to develop and deploy science and technology.**

The Hanford Environmental Mission is:

> **Hanford's environmental management, or cleanup, mission is to protect the health and safety of the public, workers, and the environment; control hazardous materials; and utilize the assets (people, infrastructure, site) for other missions.**

The Hanford Science and Technology Mission is:

> **Hanford's science and technology mission is to develop and deploy science and technology in the service of the nation, including stewardship of the Hanford Site.**

The ORP Organizational Technical Mission is:

> **The OTP Program Mission is to manage and immobilize the Hanford Site radioactive tank waste in a safe, environmentally sound, and cost-effective manner.**

The ORP Organizational Mission is:

> **As public stewards, we set the overall program strategy and performance requirements, acquire and manage the resources to achieve the ORP mission, and assure that the results satisfy ORP commitments.**

2.1.1 SCOPE OF OFFICE OF RIVER PROTECTION MISSION

The **scope** of the ORP Mission includes the activities needed to: (1) resolve safety issues; (2) operate, maintain, and upgrade tank farms and supporting infrastructure; (3) construct, operate, and maintain facilities as necessary; (4) characterize, retrieve, pretreat, and immobilize the waste for disposal and tank farm closure; (5) provide for disposition of cesium (Cs)/strontium (Sr)

Capsule contents; (6) provide disposal of immobilized low-activity waste (ILAW) onsite; (7) provide interim storage of immobilized high-level waste (IHLW) until it is shipped to the national repository; and (8) provide for closure and decontamination and decommissioning (D&) of RPP facilities and initiation of post-closure monitoring. The River Protection Project is responsible for closure of assigned operable units.

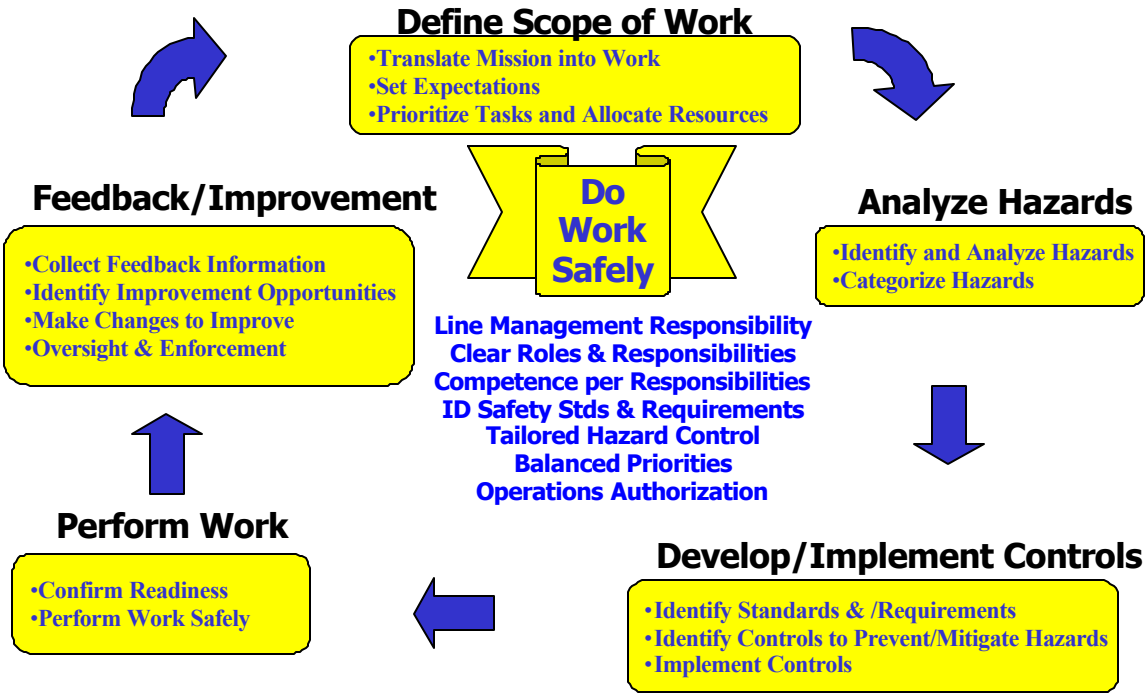
A **phased approach** is being implemented to accomplish the RPP mission in accordance with the *Tank Waste Remediation System Environmental Impact Statement Record of Decision, Hanford Site, Richland, Washington* (DOE1997). The phased approach involves stabilizing tank wastes followed by immobilizing tank wastes. The ORP Program consists of the following ten projects. The number following the project titles reflects the project baseline summary (PBS) number:

- Tank Waste Characterization Project (RL-TW01)
- Tank Safety Issue Resolution Project (RL-TW02)
- Tank Farm Operations Project (RL-TW03)
- Retrieval Project (RL-TW04)
- Process Waste Support Project (RL-TW05)
- Privatization Phase I Project (RL-TW06
- Privatization Phase II Project (RL-TW07)
- Privatization Infrastructure (RL-TW08)
- Immobilization Tank Waste Storage & disposal Project (RL-TW09)
- TWRS Management Support Project (RL-TW-10)

2.2 GUIDING PRINCIPLES FOR ORP INTEGRATED SAFETY MANAGEMENT

According to DOE Policy 450.4, the Guiding Principles are the fundamental principles that guide DOE and contractor actions, from development of safety directives to performance of work. The seven central guiding principles drive the core functions as illustrated in Figure 3.

Figure 3: Guiding Principles and Core Functions



The seven guiding principles are defined as:

Line Management Responsibility for Safety. Line management is directly responsible for the protection of the public, the workers, and the environment. As a compliment to line management, the DOE's Office of Environment, Safety and Health provides safety policy, enforcement, and independent oversight functions.

Clear Roles and Responsibilities. Clear and unambiguous lines of authority and responsibility for ensuring safety shall be established and maintained at all organizational levels within the DOE and its contractors.

Competence Commensurate with Responsibilities. Personnel shall possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities.

Balance Priorities. Resources shall be effectively allocated to address safety, programmatic, and operational considerations. Protecting the public, the

workers, and the environment shall be a priority whenever activities are planned and performed.

Identification of Safety Standards and Requirements. Before work is performed, the associated hazards shall be evaluated and an agree-upon set of safety standards and requirements shall be established which, if properly implemented, will provide adequate assurance that the public, the workers, and the environment are protected from adverse consequences.

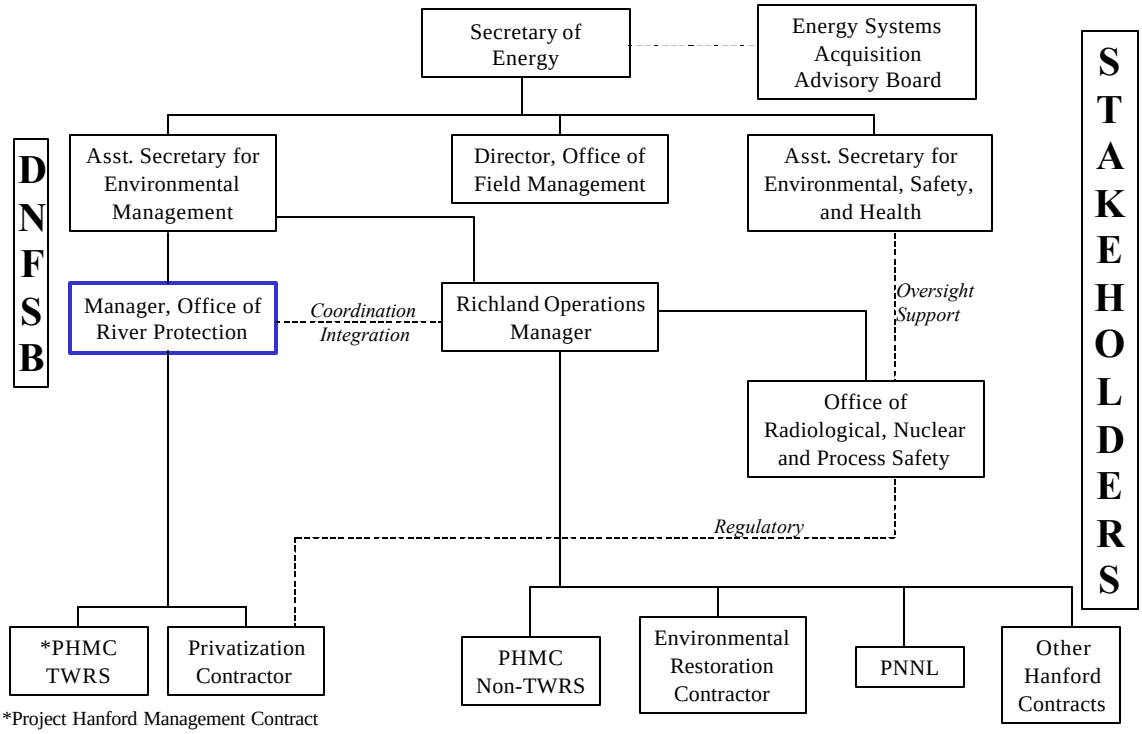
Hazard Controls Tailored to Work Being Performed. Administrative and engineering controls to prevent and mitigate hazards shall be tailored to the work being performed and associated hazards.

Operations Authorization. The conditions and requirements to be satisfied for operations to be initiated and conducted shall be clearly established and agreed upon.

2.2.1 ORP LINE MANAGEMENT RESPONSIBILITY FOR SAFETY

As the line management organization, ORP is fully responsible for all environmental safety and health aspects of the RPP Project. This includes the following functions: prioritize work with appropriate funding, ensure that safety is obligated, monitoring the contractor environmental, safety and health program and program implementation at the project level, ensure that environmental safety and health performance is meeting ORP expectations as demonstrated by performance indicators, ensure that significant environment, safety and health risks have been identified, and that the necessary funding for resolution has been provided. ORP receives its mission responsibilities and authorities from DOE Headquarters as reflected in the signed Memorandum of Agreement (MOA) issued January, 1999. Figure 4 aligns that information and responsibilities flow.

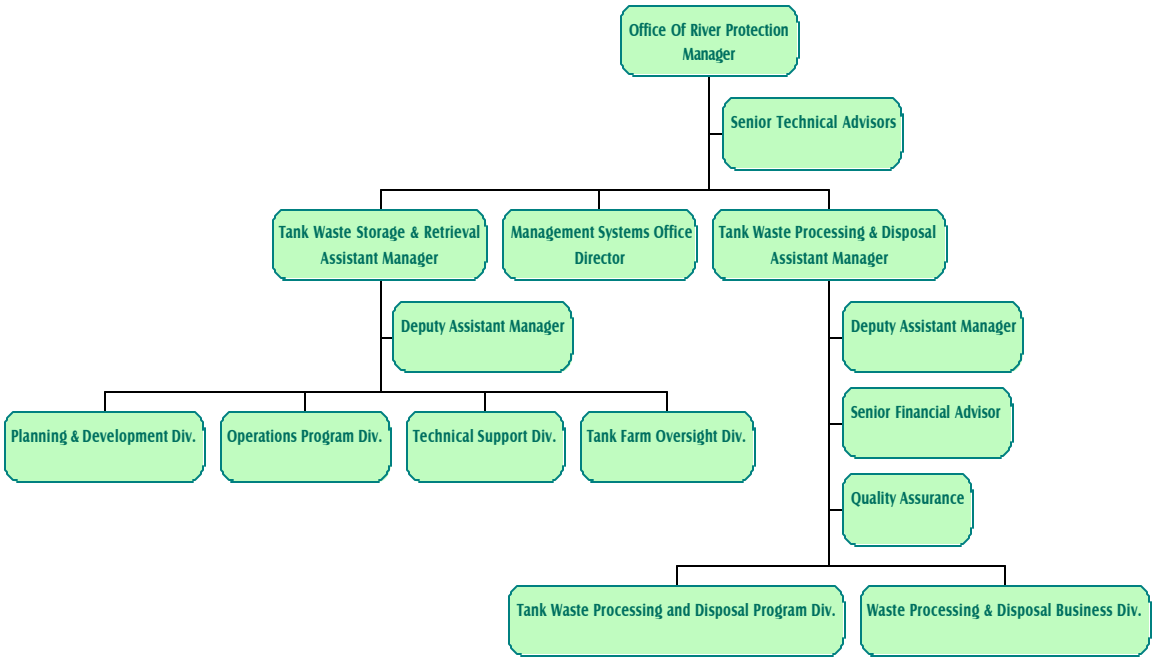
Figure 4: Responsibility and Interfaces



2.2.1.1 ORP Organization

Manager, Office of River Protection. ORP is responsible for the management and integration of the tank waste storage and RPP. The primary mission of ORP involves resolving several waste tank safety issues; operating the Resource Conservation and Recovery Act of 1976 treatment, storage, and disposal facility, committed to maintaining safe storage; and characterizing, retrieving, treating, immobilizing and storing the waste until permanent disposal. Management of capital projects in support of ORP activities is integrated into the mission. A cadre of Senior Technical Advisors provides a wide range of technical advice and expertise for ORP senior management and line organizations. Program support to ensure that the Hanford Tank operations are conducted in compliance with applicable laws, regulations, and requirements, including appropriate industry standards, is provided by the ORP Facility Representatives who oversee day-to-day tank farms operations. This relationship is reflected in Figure 5.

Figure 5: ORP Management Organization



ORP is organized to the ISMS Core Function and Guiding Principles:

- The ORP Assistant Manager assures that the necessary infrastructure is in place to support ORP projects with emphasis on assuring the establishment of **clear roles and responsibilities** and sufficiency of a staff with the **competencies commensurate with assigned responsibilities**.

- The Operations Program Division (OPD) and the Assistant Manager for Tank Waste Processing and Disposal (AMPD) provide the line management functions for ORP and are responsible for managing and **overseeing the performance of work**.

- The Management Systems Office (MSO) is a service organization to ORP line management and is responsible for defining, developing, and coordinating the processes used to **define work**. It is the primary organization responsible for assuring that the processes used result in **balanced priorities**.

- The Technical Support Division (TSD) is a service organization to ORP line management and is responsible for the **identification of safety standards and requirements** and assuring that **hazard controls are tailored to work**. TSD is directly responsible for management and oversight of contractor **analysis of hazards** and the development and implementation of controls.

- The Tank Farms Oversight Division (TOD) implements the ORP Facility Representative Program and collaborates with OPD and AMPD to assure that **hazard controls are properly identified and implemented**.

- The Planning and Development Division (PDD) is a service organization to ORP line management and is responsible for assuring that hazard controls are tailored to work. PDD is directly responsible for management and oversight of contractor waste characterization and the **development and implementation of controls** related to the vadose zone contamination from leaking tanks.

2.2.1.2 Contract Management

The TWRS Statement of Work is captured in the PHMC, which is administered by the RL Chief Financial Officer. The RL Chief Financial Officer administers RL contracts through the RL Procurement Services Division. Procurement policies, procedures, and guidance on RL procurement processes are provided in RLP 540.1A and the Procurement Division Manual. The RL Manager serves as the Head of the Contracting Activity (HCA) and is supported by the Contracting Officer (CO) who is empowered to execute the contract. Contracting Officer Representatives (CORS) support and augment the authority and functions of the CO. The Contracting Officer Representative provides a wide range of contracting duties ranging from initiation of procurement requests to providing direction to the contractor where delegated the authority. ORP personnel are engaged as CORs in the following contracts: (1) Project Hanford Management Contract, DE-AC06-96-RL13200; (2) Tank Waste Remediation System Privatization Contract, DE-AC06-RL13308; (3) General Support Service Contracts; and (4) other RL support contracts. Letters of COR designation are in place for the 9 ORP CORs and contain specific instructions as to the extent to which the representative may take action for the contracting officer.

Project Hanford Management Contract, DE-AC06-RL13200 contains the TWRS Project Statement of Work, Section C.3.A, and requires implementation of integrated safety management through DEAR Clause 970.5204-2. Contract performance measures are addressed in DOE/RL-97-39, *Contract Administration Plan*, RLP 540.1A, *Performance Based Contract Incentives*, and the *Performance Expectation Plan*.

2.2.1.3 External Interfaces and Communications

There are numerous external interfaces associated with the RPP Program. In order to coordinate these interfaces, ORP has issued and is revising the *Integrated Communication and Tribal Stakeholder Involvement Plan for the Tank Waste Remediation System (TWRS) Program.* The plan provides a framework for stakeholder and Tribal Nation communication and involvement activities and DOE roles and responsibilities for those activities. The plan is supplemented with communication plans for RPP program specific communication events. It is being revised to reflect the new ORP infrastructure and activities.

Key External Interfaces include:

- Hanford employees
- Local residents
- Local and county officials
- Regional public interest groups
- Concerned Washington and Oregon state agencies
- Regulators
- Congressional delegations from Washington and Oregon
- Defense Nuclear Facility Safety Board (DNFSB)
- Hanford Advisory Board (HAB) members
- Regional news media
- Washington trade publications
- General public

2.2.1.4 Tri-Party Agreement (TPA)

The Tri-Party Agreement (TPA) is the primary agreement governing the environmental management cleanup of the Hanford Site. The three signatories are the United States Environmental Protection Agency (EPA), the Washington State Department of Ecology (WDOE), and DOE-RL. The TPA contains the formal commitments of DOE for environmental cleanup that are legally enforceable and could subject DOE-RL to fines and penalties if they are not met. The TPA also contains processed for administering, expanding, modifying, and resolving disputes among the parties. Additionally, the TPA is the source of many of the specific requirement in the Site Environmental Management Specification. DOE-RL continues to administer the Tri-Party Agreement.

2.2.2 ORP ROLES AND RESPONSIBILITIES

During the ORP transition phase, ORP has assumed the roles and responsibilities as reflected in the RL Functions, Responsibilities and Authorities Manual (RL FRAM). The roles and responsibilities are further defined in the RL Staffing Plan for RL specific functions and activities. The RL Staffing Plan provides the analysis of staffing requirements and competencies through a Job

Task Analysis. Once an ORP FRAM is established during transition, specific ORP roles and responsibilities will be defined in an ORP Staffing Plan.

2.2.2.1 RL Functions, Responsibilities, and Authorities Manual

The RL Functions, Responsibilities, and Authorities Manual (RL FRAM) applies to ORP organization and staff until an ORP FRAM can be established. The purpose of the ORP FRAM will be to clearly define organizational responsibility, authority, and functions within ORP for implementing requirements from DOE Directives and Federal and State laws, as well as requirements which flow down from the DOE M 411.1-1, "Manual of Safety Management, Functions, Responsibilities, and Authorities" to DOE Field Element Managers and Contracting Officers.

Table 1 provides a crosswalk of the functions, requirements and assignments defined by the RL FRAM. It identifies the responsible RL divisions and further specifies the RL primary system component that is used in addition to the RL FRAM requirements that are used by ORP staff to conduct their mission responsibilities. The system components are cross referenced to the section(s) of the ORP System Description where they are further described.

Table 1 also reflects the RL FRAM Functional Area assignments under the former RL TWRS organizations. Under the new ORP organization, the previous TWRS assignments now apply as follows:

Tank Waste Remediation System (TWRS) → NOW Office of River Protection (ORP)

Management and Systems Division (MSD) → NOW Management Systems Office (MSO)

Waste Storage Division (WSD) → NOW Operations Program Division (OPD)

Tank Operations Division (TOD) → NOW Tank Farms Oversight Division (TOD)

Safety & Characterization Division (SCD) → NOW Technical Support Division (TSD)

Waste Disposal Division (WDD) → NOW Assistant Manager for Tank Waste Processing & Disposal (AMPD)

TABLE 1: RL FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES MANUAL (RL FRAM) CROSSWALK				
Functional Area	RL FRAM Requirements	TWRS Assignments	TWRS Primary System Component	System Description Section
1 Accident Investigation	**DOE O 225.1A** DOE O 232.1 RL DOE-0223, RLEP 1.0, 3.0	SCD, MSD, WSD, WDD, TOD	-DOE 232.1A -DOE-0223, RLEP 3.13 -RLID 232.1 -Accident investigation checklist -DOE-RL Accident Investigation Resources (June 1998) -DOE Implementation Guide, (G225.1-1), Rev 1, November 1997	3.5.4
2 Configuration Management	**DOE-SDT-1073-93**	WSD, WDD, SCD, MSD, TOD	-DOE-STD-1073-93 -GPG-FM-009 -GPG-FM-012 -RLP 5000.6A -RLIPP 1322.1B -TWRS Procedure 09-03, Document Control (4/13/94) -TWRS Procedure 09-09, Document Review and Approval (4/13/94) -FRI 001 -HNF-1900 TWRS Configuration Management Plan	2.2.4.3
3 Construction	**DOE 0 430.1**	MSD, WSD, WDD, SCD	-DOE O 430.1 -DOE/RL-98-61, Chapter 5 -RLID 430.1 -TWRS 01-04 Key Decisions Process -DOE FM-20 Good Practice Guides	3.4.3
4 Decontamination & Decommissioning	Not Applicable to TWRS			
5 Directives/ Requirements Management	**DOE P 411.1** DOE FRAM Sections 8&9 DOE O 251.1 DOE M 251.1 DOE 1300.2A	MSD, WSD, WDD, SCD	-DOE 1300.2A -DOE M 411.1-1 -RL FRAM, Rev 5 -RLP 253.1 -RLP 5000.6A -Project Hanford Management Contract, Section J,	2.2.5 2.2.5 3.2.5.1

TABLE 1: RL FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES MANUAL (RL FRAM) CROSSWALK				
	DOE M 450.3-1		Appendix C -RLID 1321.1A -RLP 1380.1, 1380.4, 1380.5 -RL Letter 95-TOD-238, (March 18, 1996) -TWRS FY 1999-2000 Priority List	
6 Emergency Management	DOE O 151.1 DOE 5530.1A DOE 5530.3	TWRS, WSD, WDD, MSD, SCD, TOD	-DOE G 151.1-1 (8/21/97) -DOE-0223, RLEP 2.3.2, 2.3.54 -DOE/RL 94-02 -DOE 5530.2	2.2.6.2 3.2.1
7 Engineering/ Design for Construction Projects	DOE O 430.1 DOE 6430.1A	MSD, WSD, WDD, SCD	-DOE 4700 -DOE FRM-20 Good Practice Guides -GPG-FM-001 -GPG-FM-002 -GPG-FM-003 -GPG-FM-004 -GPG-FM-005 -GPG-FM-006 -GPG-FM-007 -GPG-FM-008 -GPG-FM-009 -GPG-FM-010 -GPG-FM-011 -GPG-FM-012 -GPG-FM-013 -GPG-FM-014 -GPG-FM-015 -GPG-FM-016 -GPG-FM-017 -GPG-FM-018 -GPG-FM-019 -GPG-FM-020 -GPG-FM-021 -GPG-FM-022 -GPG-FM-023 -GPG-FM-024 -GPG-FM-025 -GPG-FM-026 -GPG-FM-027 -GPG-FM-028 -GPG-FM-029 -GPG-FM-030 -GPG-FM-031 -GPG-FM-031A -GPG-FM-033 -RLP 4700.1 -Three Tier Review -TWRS Risk Management -TWRS Project Review -97-MSD-285 -Draft RL TWRS Desk Procedure, Programmatic Risk	3.4.1 3.4.3

TABLE 1: RL FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES MANUAL (RL FRAM) CROSSWALK				
			management -Draft TWRS DOE 430.1 Life Cycle Asset Management Implementation Manual -TWRS 01-04, key Decisions Process	
8 Environmental Protection	General DOE 5400.1 DOE O 231.1 40 CFR50 & 58 NEPA 40CFR1500-1508 10CFR1021 DOE 451.1A **Permits** 40 CFR52 40 CFR61, Subpart H 40CFR264& 265 WAC-173-400 & 460 WAC 246-247 40CFR110-140 WAC 173-200,216,218,240 Consent Order DE-91NM-177 40CFR141 40CFR260-270 WAC173-303	MSD,WSD,WDD, SCD, TOD	-RLID 440.3 -RLIP 5484.1A -DOE M 231.1-1 -DOE/RL-98-54, Rev 0 (July 1998) -DOE/RL-91-50, Rev 2 (Nov. 10, 1997) -GPG-FM-021 -Letter 98-SCD-098 -Letter 98-PAD-61590 -Draft TWRS NEPA Procedure -DOE/EIS-0189 (August 1996) -DOE/EIS-0189-SA1 (June 1997) -DOE/EIS-0189-SA2 (May 1998) -62 FR 8693 (February 26, 1997) -Tier 3 Review -40CFR52 -40CFR61, Subpart H -40CFR264 & 265 -WAC-173-400 &460 -WAC 246-247 -40CFR110-140 -WAC 173-200,216,218,240 -Consent Order DE-91NM-177 -40CFR141 -40CFR260-270 -WAC173-303 -DOE/RL-96-10 (June 27, 1997) -DOE/RL-98-33 (1997) -98-TWR-017 -DOE/RL-98-49 (July 1998)	

TABLE 1: RL FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES MANUAL (RL FRAM) CROSSWALK				
	40CFR761 36CFR63 36CFR65 36CFR296 43CFR3 43CFR7 42USC1966 WAC 173-360 50CFR17,222,&277 40CFR355,370 & 372		-DOE/RL-98-48 (July 1998) -DOE/RL-98-56, Rev 0, (September 1998) -40CFR761 -36CFR63, 36CFR65, 36CFR296 -43CFR3 -43CFR7 -42USC1966 -WAC 173-360 -50CFR17,222,&227 -40CFR355,370 & 372	
9 Environmental Restoration	TPA	MSD,WSD,WDD, SCD	-Hanford Federal Facility Agreement and consent Order (Tri-Party Agreement) by Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy -RL-TPA-90-0001	2.2.1.5
10 External Affairs	DOE FRAM 9.6.3.4	MSD,WSD,WDD, SCD, TOD	-DOE 1220.1A -DOE1230.2 -DOE M 140.1-1 -DOE 1350.1 -TWRS Integrated Communication and Tribal/Stakeholder Involvement Plan for the TWRS Program -GPG-FM-022	2.2.1.4
11 Financial Management & Budgeting	FRAM Section 9.1.4 & 9.1.5 DOE 5480.20A DOE/RL-96-26 RL2100.1B RL2300.1B	TWRS	-DOE 5700.7C -DOE 21.12A -DOE O 534.1 -DOE O 135.1 -DOE O 130.1 -RLID 5000.1 -RLP 5000.6A -RL2100.1B -RL2300.1B -RLP5700.9 -DOE/RL-97-52 (June 1997) -GPG-FM-009	2.2.4.1 2.2.4.2 3.1 3.4.1.2

TABLE 1: RL FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES MANUAL (RL FRAM) CROSSWALK				
			-GPG-FM-032A -TWRS Procedure 01-07, Baseline Change Control (2/9/96) -TWRS Desk Procedure #1, Baseline Change Control Process -TWRS Desk Procedure #4, Reviewing and Certifying FDH Invoices (Rev 3) -Baseline Update Guidance (BUG) -Hanford Site Environmental Management Specifications -Integrated Priority List (IPL) -DOE/RL-97-90 Rev 0	
12 Fire Protection	DOE O 420.1 RLID 5480.7 DOE O 440.1	TWRS	-DOE 0 440.1A -DOE O 231.1 Change 2 -RLID 5480.7 -DOE/RL-98-61, Chapters 13 & 14	2.2.6.2 3.2.1
13 Hoisting & Rigging	DOE/RL-92-36	TWRS	-DOE-RL-92-36 -DOE/RL-98-61, Chapter 7	2.2.6.2
14 Human Resources	RL 3510.1 DOE O 322.1 DOE O 311.1A	TWRS	-DOE O 325.1 -DOE O 350.1 -RL 3000.2 -RL 3330.2 -RL 3330.2 -RL 3335.1A -RL 3410.2B -RL 3410.3 -RL 3410.4 - RL 3510.1 -RL 3550.1C -RL 3630.1 -RL 3735.1C -RL 3792.1 -RL 3792.2 -RLIP 3430.3A -RLIP 3340.1A	2.2.1.1

TABLE 1: RL FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES MANUAL (RL FRAM) CROSSWALK				
15 Lock & Tag	DOE 5480.19 Chapter IX	MSD,WSD,WDD, SCD, TOD	DOE-RL-SOD-INST-L&T.001	2.2.6.2
16 Maintenance	DOE 4330.4B	MSD,WSD,WDD, SCD, TOD	-DOE 4330.4B -GPG-FM-031 -Facility Representative Instructions	3.4.1
17 Nuclear Safety	DOE 5480.23 DOE 5480.22 DOE 5480.21 DOE O 420.1 DOE STD 3009 DOE STD 1027-92	MSD,WSD,WDD, SCD,TOD	-RLP 5480.21 -RLP 5480.23 -RL Nuclear Safety Manual, Rev 0, (October 29, 1996) -TWRS Procedure 08-01, (5/97) Safety Documentation Review and Approval -TWRS Procedure 08-03, (4/94) Unreviewed Safety Questions -TWRS Procedure 08-04-01, (4/94), Technical Safety Requirements Review and Approval -TWRS Procedure 08-04-02 (4/94) Justification for Continued Operation Review and Approval -TWRS Action Plan (April 30, 1998) -RL TWRS Docket -Letter 93-TWS-043 -Letter 98-SCD-092 -TWRS Risk Management -Tank Advisory Panel -Draft Safety Management Process -Letter 98-SCD-098 -98-TWR-017 -97-MSD-285 -Draft RL TWRS Desk Procedure, Programmatic Risk management Tier 3 Review	2.2.6.2 3.2.1 3.2.3 3.2.5
18 Occupational Safety & Health	DOE O 440.1	MSD, WSD, WDD, SCD,TOD	-DOE O 440.1A -DOE O 440.2 -DOE 231.1 -29CFR1910 -ACGIH/NIOSH Guidelines -RLIP 3790.1C -DOE/RL-98-61 -Hanford Occupational Health Process -Employee Job Task Analysis	2.2.6.2 2.2.6.3 3.2.5.4

TABLE 1: RL FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES MANUAL (RL FRAM) CROSSWALK				
			-RL Occupational Safety and Health Performance Assessment Guides -Program Desk Manual for OS&H -Chemical Vulnerability Assessment -Tier 3 Review -Letter 95-PAD-61590 -RL 98-177 -Letter 98-SCD-098	
19 Occurrence Reporting	DOE O 232.1A DOE M 232.1-1A	MSD,WSD,WDD, SCD, TOD	-RLID 232.1A -Facility Rep Instructions (FRI 011) -TWRS Procedure 08-10-01 (4/94) Occurrence Notification	3.5.1.5 3.5.3
20 Operations	**DOE 5480.19**	MSD,WSD,WDD, SCD, TOD	-RL 93-25, Imminent Danger Response Actions -DOE/RL-97-72 -TOD Monthly Reports on Tank Farms -TOD Fac Rep Report to RL MGR -Fac REP Surveillance Reports -Final Report of TFR Self Assessment -RLID 5480.19 -RLID 1300.1C -RL 2300.1B -RLP 10-01 -DOE-Std-1063-97 -DOE-EM-Std-5505-96 -Facility Representatives Instructions -FRI 001 -FRI 002 -FRI 003 -FRI 004 -FRI 005 -FRI 006 -FRI 007 -FRI 008 -FRI 009 -FRI 010 -FRI 011 -FRI 012 -FRI 013 -FRI 014 -FRI 015 -FRI 016 -TWRS Procedure 05-01 (3/97) Management Walkthrough -TWRS Procedure 06-01-02 (4/94), Continuous Improvement Management Assessments -TWRS Procedure 06-01-03 (4/94), Continuous	2.2.7 3.4 3.4.1.4 3.5

TABLE 1: RL FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES MANUAL (RL FRAM) CROSSWALK				
			Improvement Independent Assessments - Audits -TWRS Procedure 06-01-04 (4/94) Continuous Improvement Independent Assessments -TWRS Procedure 06-01-08 (4/94) Continuous Improvement – Corrective Actions -Letter 95-PAD-61590 -Letter 93-TWS-043 -TWRS Risk Management -TWRS Project Review -Letter 98-SCD-098+-	
21 Packaging & Transportation	DOE O 460.1A DOE O 460.2	MSD,WSD,WDD, SCD, TOD	-DOE O 460.1A -DOE O 460.2	2.2.6.2
22 Planning	DOE FRAM Section 9.1.3 RLPD 5000.1	TWRS	-DOE O 224.1 -DOE O 413.1 -RLID 430.1 -RLPD 430.1 -RLPD 5000.1 -RLID 5000.1 -RLID 5000.2 -RLP 5000.7 -RLP 5000.8 -RLP 5000.10 -RLP 5000.11 -RLP 5000.16 -GPG-FM-008 -GPG-FM-010 -DOE/RL-97-52 (June 1997) -TWRS Desk Procedure #3, PHMC Requirements Revision Process (7/97) -TWRS Desk Procedure #5, Completion of FY98 Performance Agreement -97-msd-193 -RL FY 1999 Report -Hanford Strategic Plan	2.2.4.1 2.2.4.2 3.1

TABLE 1: RL FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES MANUAL (RL FRAM) CROSSWALK				
			-TWRS Logic -TWRS Risk Management -TWRS Planning Process -Letter 97-PID-510	
23 Procurement	FAR 45.1502 FAR 16.4 FAR 15.608(a)(3) FAR 5.4 DEAR 916 & 975-1509 DOE O 541.1 DOE FRAM 9.4 & 9.6 DOE Acquisition Guide (DOE/HR-0137)	MSD,WSD,WDD, SCD, TOD	-DOE Acquisition Guide -DOE/RL-97-38 (DOE/HR-0137) -RL 4200.2A -RLID 4200.4 -RLP 541.1 -RLP 540.1A -RLPD 5000.1 -Project Hanford Management Contract No. DE-AC06-96RL13200 -TWRS Desk Procedure#3, (7/97), PHMC Requirements Revision Process -TWRS Desk Procedure #5 (7/98), Completion of Y98 Performance Agreements -H.R. 3616 -Contract Administration Plan Project Hanford Management Contract DE-AC06-96RL13200 (DOE/RL 97-38) -PHMC Contract -Procurement Office “How doe I?” booklet -Letter 97-PRO-294 -Procurement Division Manual # 97-002 -CO/COR List	2.2.1.3
24 Property Management	41CFR101 &109 DOE 430.1	TWRS	-DOE 430.1 -GPG-FM-033	3.4.3
25 Quality Assurance	10CFR830.120 10CFR820 DOE 5700.6C RW/0333P DOE FRAM 9.6.3.3 DOE FRAM 9.6.1.4	MSD,WSD,WDD, SCD, TOD	-DOE 5700.6C -GPG-FM-017 -RLP 1000.1 -RL Quality Assurance Program Description	2.2.4.4
26 Radiation	10CFR835.101	TWRS	-10CFR835.101	2.2.6.2

TABLE 1: RL FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES MANUAL (RL FRAM) CROSSWALK				
Protection	RSCS Charter HSRCM, Art. 152 & Art. 156 RLID 1300.1C		-RL Radiological Control Steering Committee Charter -HSRCM-1 (Rev 2), Art. 152 & Art. 156 -RLID 1300.1C	
27 Readiness Review	DOE O 425.1	TWRS	-DOE 425.1 -DOE-EM-Std 3006-96 -DOE-HDBK 3012-96 -RLID 425.1	3.4.2
28 Records Management	36CFR Chapt. XII, Sub B 44USC Chapt. 29, 31, & 33 41USC Chapt. 201, Pt.201-9	MSD,WSD,WDD, SCD, TOD	-DOE O 350.1, Change 1 -RLID 1324.1 -RLID 1324.2	2.2.4.5
29 Safeguards and Security	DOE O 470.1,5.m RLID 473.1 DOE M 5632.1C-1 DOE 1360.2B RLID 471.2A, 7.c(1) DOE 1240.2b,9 DOE O 472.1B 10CFR710.8 DOE O 470.1, Chapt. IV	TWRS	-DOE M 471.2-41A -DOE Order 5633.3B -DOE Order 1500.3 -DOE Order 5670.3 -DOE Order 1240.2B -DOE Order 5632.1C -RLID 473.1 -RLID 471.2A, 7.c(1) -RLID 470.1 -RLID 473.2 -RLID 1360.2B -RLID 5633.3 -RLID 5635.1 -RLID 5670.3A -RLID 1210.1 -RLID 5632.1B -RLID 5635.3 -RLID 5670.3	2.2.6.2
30 Training & Qualifications	DOE 5480.20A, 7.d DOE O 360.1	TWRS	-DOE 5480.20A, 7.d -DOE O 360.1	2.2.2.2 2.2.3

TABLE 1: RL FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES MANUAL (RL FRAM) CROSSWALK				
	RLID 1300.1C		-RLP 1380.1 -RLID 3410.TST -RLID 1300.1C -Letter, 97-OTR-60 (10/20/98) RL Technical Qualification Program Plan (10/1/97) -RL TWRS Staffing Analysis – Corrective Action Plan, Rev. 2 -FRI 014 -TWRS Staff Qualifications	
31 Waste Management	DOE 5480.20A, 8.j.(4)	MSD,WSD,WDD, SCD, TOD	-DOE Order 5820.2A -DOE 5480.20A, 8.j.(4) -GPG-FM-025 -Letter, 98-SCD-066 (7/30/98)	2.1.1 2.2.1.5 3.4
32 Employee Concerns Differing Prof. Opinion	DOE 5480.29, Sec. 8.f.(9)	MSD,WSD,WDD, SCD, TOD	-RLID 5480.29 -RLPD 340.1	3.5.5
33 Integrated Safety Mgmt.	DOE P 450.4	TWRS	-DOE G 450.4-1 -RLPD 450.1 -DOE Integrated Safety Management System verification Process Team Leader's Handbook -DOE/RL 98-63 TWRS Policy Statement	4.0
34 Performance Indicators	DOE O 210.1, 5.a & 5.b	MSD,WSD,WDD, SCD, TOD	-DOE O 210.1, 5.a & 5.b -GPG-FM-006 -GPG-FM-020	3.5.1.5
35 Regulation of Contractors Treating Tank Waste	DOE/RL-96-25	TWRS	-DOE/RL-96-25 Letter, 98-SCD-006 (7/30/98)	2.2.1.3 2.2.1.5
36 Classification/Declassification	Not Applicable to TWRS			

2.2.2.2 TWRS Staffing Plan

Within DOE, substantial changes in mission, organization structure, and roles and responsibilities have taken place since the development of the TWRS staffing plan. During the ORP transition phase, a specific and refined Staffing Analysis will be developed to reflect the ORP organization and an ORP Staffing Plan will follow.

The purpose of the ORP Staffing Analysis is to assure that: (1) ORP roles and responsibilities have been identified and assigned to divisions and positions in the ORP organization; (2) functions and tasks and associated technical competencies to perform the roles and responsibilities have been determined; and (3) any personnel training needs to upgrade required technical competencies have been identified and addressed. The staffing analysis is comprised of a functional analysis determined of required competencies, an examination of functions and tasks through a Job Task Analysis (JTA), and an organizational gap analysis to identify recruitment needs.

2.2.3 ORP STAFF COMPETENCE COMMENSURATE WITH RESPONSIBILITIES

Doe Order 360.1, Training, Chapter II, prescribes the general requirements associated with the Technical Qualification Program (TQP), and outlines the content requirements for Headquarters and Field Office procedures that govern implementation of the ORP program. The RL Office of Training (OTR) has lead responsibility for implementing the program and provides this function for ORP. ORP has implemented and completed the commitments of the DNFSB Recommendation 93-3, “Training and Qualifications”, through the RL Technical Qualification Program Plan (97-OTR-60).

2.2.3.1 ORP Training and Qualifications Program (DNFSB 93-3)

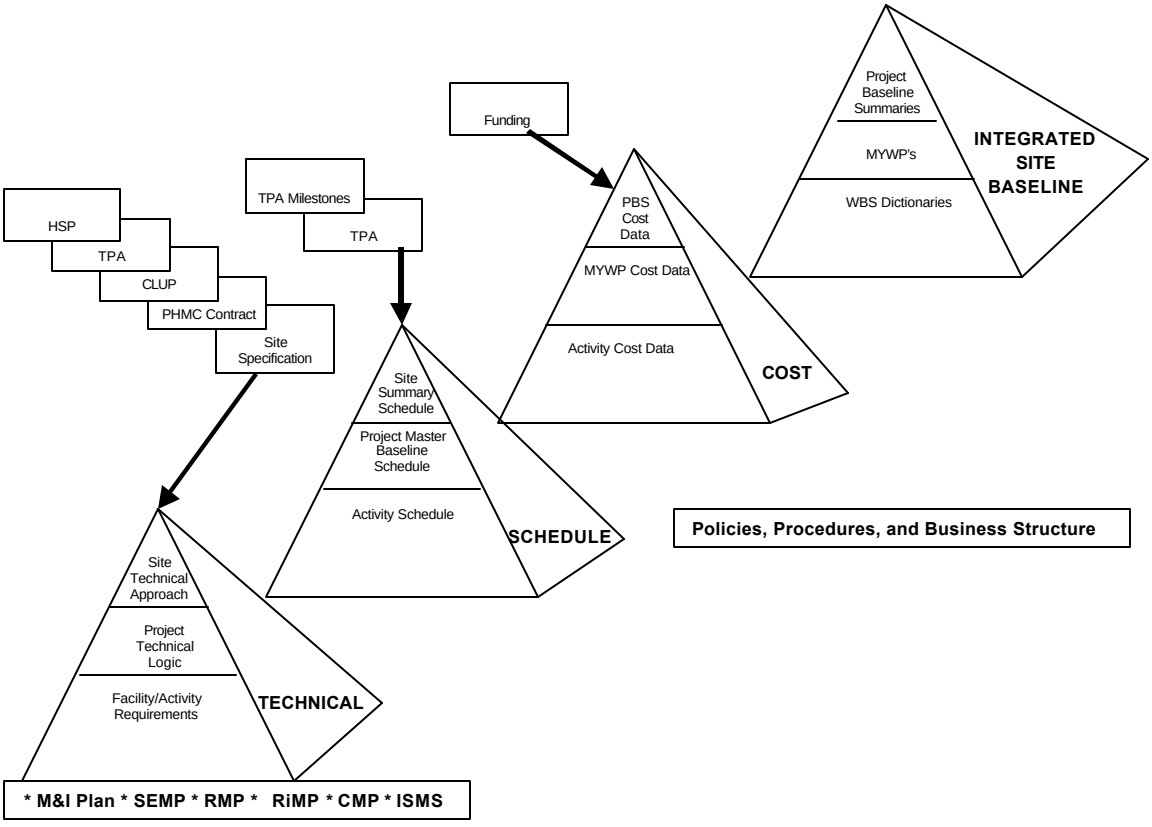
The DNFSB Recommendation 93-3 was issued on June 1, 1993, and subsequently accepted by DOE on July 23, 1993. The recommendation discussed the need to improve the technical ability of Federal employees associated with defense nuclear facilities. The DNFSB Recommendation 93-3 Implementation Plan addressed the DOEs Recommendation 92-4 which addressed training and qualification of Federal employees associated with defense nuclear facilities. The Technical Qualification Program has been developed for those employees performing activities affecting the safe operation of defense nuclear facilities and they must participate.

2.2.4 ORP BALANCED PRIORITIES

DOE/RL 97-52, Basic Planning and Work Performance of Hanford Site Environmental Management Activities, provides an overview of the basic

planning and work processes implemented at DOE-ORP. It defines key terms, concepts, and processes used in Hanford's EM activities. It provides a roadmap to the overall process. In general terms, decision-related actions by ORP can be viewed in three major stages: as parts of the planning process, the decision process, and decision implementation. ORP provides the site-wide architecture for the planning and budget process which results in an Integrated Site Baseline (ISB) as illustrated in Figure 6.

Figure 6: ORP Work Planning



The **Technical "pyramid"** defines the technical basis and logic for the ISB. It must factor in internal and external requirements (E.G., the Tri-party Agreement, ES&H facility specific requirements).

The Schedule **"pyramid"** defines the schedule basis for the ISB. It is constrained by Tri-Party Agreement commitments, project schedules which roll up from activity schedules to Project Master Baseline Schedules to an integrated Site Summary Schedule.

The **Cost "pyramid"** is built upon the Technical and Schedule Baselines. Cost data is rolled up from individual activities to Multi-Year Work Plan cost data to project baseline summaries. The costs are constrained by budget allocations determined by DOE Headquarters for the Hanford site.

Priorities are made based on the Technical and Schedule pyramids.

2.2.4.1 RL Baseline Management and Planning Activities

ORP authorizes, manages, and performs Hanford environmental management to a baseline that reflects the technical requirements, estimated cost, and estimated schedule. The baseline is developed as a work plan for project activities to accomplish the desired results of the Site Environmental Management Specification. Multi-Year Work Plans (MYWPs) and Annual Work Plans (AWPs) are the expression of the baseline and serve as a performance measurement gauge. The baseline is what DOE and its contractors work to achieve. It is a formal document and is updated through the change control process. For additional information on the DOE baseline management process see DOE/RL 97-52, *Basic Planning and Work Performance of Hanford Site Environmental Management Activities*.

2.2.4.1.1 Hanford Site Environmental Management Specifications

The Hanford Site Environmental Management Specification is the fundamental work definition document for cleanup, infrastructure, and environmental management work at Hanford. Through the application of systems engineering to the many requirements and planning documents and processes, this specification captures the applicable requirements and planning assumptions for sitewide activities and the individual project-specific activities. The requirements and planning assumptions reflect DOE's application of the values, priorities, and critical success factors expressed by those involved with and affected by Project Hanford.

The Site Environmental Management Specification is generated by the PHC with input from other prime contractors and is approved by ORP. Once approved, the document is used to provide execution direction to the PHMC and other prime contractors. The document includes a compilation of the General site Environmental Management Requirements and Planning Assumptions with a separate listing of project specific performance based and results based requirements and planning assumptions. This document is maintained under change control.

2.2.4.1.2 Integrated Site Baseline

The PHMC generates the Integrated Site Baseline (ISB) with input from other contractors. The ISB is approved by RL. The purpose of the document is to

provide a Sitewide integrated life-cycle cost, schedule, and technical baseline for the Project Hanford Environmental Management projects, that demonstrates appropriate interaction and sequencing of the individual project activities to accomplish the desired outcomes of the Site Environmental management Specification. The document is maintained under change control.

2.2.4.1.3 Baseline Update Guidance

ORP generates baseline update guidance (BUG). The BUG is a planning document for the Annual Baseline Updating Process which provides updated guidance to the PHMC and other RL prime contractors by guiding changes to the contractor specification or baseline with particular focus on the next fiscal year. The document contains contractor/project specifications, baselines, alternatives for analysis, updated Budget Targets, updated schedule and mission-level performance objectives and measures. The document is issued annually in June. Approved revisions to the contractor/project specifications govern work execution in the next fiscal year.

2.2.4.1.4 Integrated Priority (Site)

The Site Integrated Priority List (IPL) is generated by the PHMC with input from other prime contractors and approved by DOE. The document provides the integrated life-cycle cost, schedule, and technical baseline for the Project Hanford Management projects. The IPL provides priorities for sequencing of individual project activities. The document contains summary level major technical, cost, and schedule baseline information. The document is maintained under change control. The site categorizes priorities into four categories: (1) minimum safe; (2) essential services; (3) urgent risks; and (4) maintaining compliance. The IPL is established with input from stakeholders.

2.2.4.1.5 Baseline/RPP Specifications Change Control Process

ORP generates and maintains a change control process to control changes to the cost, schedule, and technical baselines such that contractor and project objectives as manifested in those baselines are always reviewed and approved by the appropriate authority levels in ORP.

Change packages describe proposed changes to contractor and project specifications and/or baselines including rationale for, impacts, and timing of those changes. The process includes approved procedures, change approval at appropriate levels, communication of approved changes to affected organizations, and planning and tracking of change implementation.

2.2.4.2 DOE Project Specifications

The DOE Project Specifications are determined at the ORP level and are further defined on an annual basis through the:

- DOE Work Break Down Structure
- DOE Multi-Year Work Plan
- DOE Project Baseline Summary
- DOE Amendment to the Baseline Update Guidance
- DOE Requirements identified in Table 1, FRAM Crosswalk
- DOE Project Specification Change Control Process

2.2.4.2.1 Work Break Down Structure

The Work Break Down Structure (WBS) incorporates the Facilities and Functions tied to the Hanford Site Technical Database (HSTD). The WBS contains both the HSTD (contractor) numbering hierarchy and (DOE) WBS numbering. DOE controls the Level 3 Project Baseline Summary (PBS). The M&I Contractor controls Level 4 (Facility) and Level 5 (Functions), and the Major Subcontractors (MSCs) control Level 6 and below for baseline planning and execution. The Level 6 breakdown of the WBS is tied to the detailed planning in the Technical Basis Review logic. The work activities are subdivided to Level 8 of the WBS for final planning and cost allocation.

2.2.4.2.2 Multi-Year Work Plan

The Multi-Year Work Plan (MYWP) is developed by the PHMC with DOE guidance and approval. It provides the planning basis for authorizing and executing work at the project level. MYWPs are the expression of the project baseline. The MYWPs demonstrate the contractor's plan for meeting the project specification. Baselines reflect expected performance. The MYWP is under change control. Changes in the Annual Baseline Updating Process are submitted to project managers for review by August (draft) and in September for DOE approval.

2.2.4.2.3 Project Baseline summary

Contractors prepare the Project Baseline Summary (PBS) with DOE guidance and approval. The associated MYWP contains a greater amount of detail. The PBS summarizes baseline information, risk information, and baseline performance measures. During the annual planning process, additional planning information on budget scenarios is included for budget submittals. The specific contents are determined by DOE Headquarters.

2.2.4.2.4 Specification Change Control Process

The Specification Change Control Process controls changes to the cost, schedule, and technical baselines such that contractor and project objectives as manifested in those baselines are always reviewed and approved by the appropriate authority levels. The process is implemented through change

packages that describe proposed changes to contractor and project specifications and/or baselines including rationale for, impacts, and timing of those changes to affected organizations; and planning and tracking of change implementation.

2.2.4.3 Configuration Management

RL field directives are issued to supplement DOE directives. These directives consist of RL Policy Directives (RLPDs), RL Implementing Directives (RLIDs), RL Manuals (RLMs), ORP Manuals, RL Manager Notices (RLNs), and RL Procedures (RLPs). Other terminology was used in the past, but new RL directives will use the above system. RL Directives use the same numbering system as the DOE directive they supplement. ORP is developing a parallel directive system and during transition activities is using the RL system.

Although DOE-HQ has issued a large number of 3-digit Orders and canceled the corresponding 4-digit Orders, the majority of the 3-digit Environment, Safety, and Health related Orders have not been contractually imposed on Hanford contractors in lieu of the 4-digit Orders. The reason for this is concern that replacement of the 4-digit Orders with the 3-digit Orders will result in a reduced level of safety due to the generally more prescriptive nature of the 4-digit Orders. As a result of this concern, DOE P 450.2A, *Identifying Implementing, and Complying with Environment, Safety, and Health Requirements*, has been issued.

ORP conducts Configuration Management in accordance with the Hanford Sitewide RL Procedure, RLP 5000.6A, *Change Control*. The procedure applies to all change requests that have programmatic impact. Specifically, it is applicable to cost, schedule, or technical baseline impacts to Fiscal Year Work Plans (FYWPs), MYWPs, Activity Data Sheets/Technical Task Plan, Tri-Party Agreement, Headquarters or DNFSB milestones, and WBS at the program level or higher.

DOE has issued formal procedures and desk instructions to provide further configuration over routine work processes. Good Practice guide, GPG-FM-012, *Configuration and Data Management* and GPG-FM-009, *Baseline Change Control* further provide configuration management tools for Project Managers. Also refer to ORP Formal Procedures 09-03, *Document Control* and 09-09, *Documented Review and Approval*, and Facility Representative Instruction 001.

2.2.4.3.1 ORP Formal Procedures and Desk Instructions

The following tables (Table 2 and Table 3) provide a list of ORP Project Formal Procedures and Desk Instructions.

Table 2. ORP Formal Procedures

Procedure Number	Procedure Title	Date
01-04	Key Decision Process	6/1/95
01-07	Baseline Change Control	2/9/95
05-01	Management Walkthrough	3/1/97
06-01-02	Continuous Improvements-Management Assessments	4/13/94
06-01-03	Continuous Improvements-Independent Assessments- Audits	4/13/94
06-01-04	Continuous Improvement-Independent Assessments-Surveillances	4/13/94
06-01-08	Continuous Improvement-Corrective Actions	4/13/94
08-01	Safety Documentation Review and Approval	5/13/97
08-03-00	Unreviewed Safety Questions	4/13/94
08-04-01	Technical Safety Requirements-Review and Approval	4/13/94
08-04-02	Justification for Continued Operations-Review and Approval	4/13/94
08-04-03	RL TWRS Issue Resolution Process	TBD
08-10-01	Occurrence Notification	4/13/94
09-03-00	Document Control	4/13/94
09-09-00	Document Review and Approval	4/13/94
DOE/ORP 414.1	Quality Assurance Program Implementation Assessments	TBD
DOE/ORP 151.1	Emergency Management Program Implementation Assessments	TBD
DOE/ORP 440.1.1	Worker Safety and Health Protection Program Oversight	TBD
DOE/ORP 440.1.2	Radiological Control Program Oversight	TBD
DOE/ORP 450.4-1.1	Authorization Agreement Development and Verification	TBD

Table 3. ORP Desk Procedures		
Procedure Number	**Desk Procedure Title**	**Date**
#1	Program Change Control Process	6/14/96
#2	Template for RL TWRS Presentations	2/98
#3	PHMC Requirements Revision Process	7/18/97
#4- Revision 1	Reviewing and Certifying for Invoices	5/30/98
#5	Completion of FY98 Performance Agreements	7/1/98

2.2.4.4 Quality Assurance

ORP utilizes Quality Assurance processes that are provided by the RL *Quality Assurance System Description* (RL-QAPD). The RL-QAPD is based on the criteria set forth in DOE Order 5700.6C and is in accordance with 10 CFR 830.120, *Quality Assurance*. ORP implements Quality Assurance Criteria as follows:

- Program Description — Chapter 2.0
- Personnel Training and Qualification — Sections 2.2.2 and 2.2.3
- Quality Improvement — Sections 3.3.2 and 2.2.4.4
- Documents and Records Management — Section 2.2.4.5
- Work Processes — Sections 3.4 and 3.5
- Design — Section 3.4 and 3.5
- Procurement — Section 2.2.1.3
- Inspection and Acceptance Testing — Section 3.5
- Management Assessment — Section 3.5.1.3
- Independent Assessment — Section 3.5.1.3

The 10 criteria are fully integrated within the ORP Integrated Safety Management System. Quality Assurance is an integral part of the management of each TWRS Project in keeping with Good Practice Guide, GPG-FM-017, *Quality Assurance*.

2.2.4.5 ORP Records Management

ORP internal and external correspondence is maintained in accordance with the RL Records Management Program documented in RLID 1324.2. This program encompasses the creation, maintenance, use and disposition of all records, regardless of media or classification and applies to all personnel preparing and or processing correspondence. Electronic files and document images of ORP and RPP correspondence are retrievable through the use of the Records Management Information System (RMIS). ORP maintains records with respect to all of the ISMS core functions.

2.2.5 Identification of Safety Standards and Requirements

At a site wide infrastructure level, ORP has participated in the development of site wide requirements through the development of the RL FRAM. The requirements of the RL FRAM which apply to ORP are extracted and factored into organizational and individual roles and responsibilities for the development and specification of requirements tailored to the management of hazards identified in RPP facilities. DOE approves the Contractors Standards/Requirements Identification Document which is required through the PHM Contract (Section 2.2.5.2).

2.2.5.1 RL Functions, Responsibilities, and Authorities Manual

The DNFSB issued Recommendation 95-2 on October 11, 1995. Recommendation 95-2 addressed the need to establish safety management systems that will assure that safety is effectively integrated into work conducted at DOE Sites. In response to Recommendation 95-2, DOE has committed to develop FRAMs at the Corporate level, at the CSO level, and at the Operations Office level which specify functions, authorities, and responsibilities for safety management within DOE. RL's Quality, Safety, and Health Program Division (QSH), author of the RL FRAM, maintains a crosswalk between Field Element Manager responsibilities from the DOE M 4ll.1-1 and function statements from the RL FRAM. QSH will review the RL FRAM on an annual basis to incorporate any changes based on new or revised DOE and/or RL Directives. As illustrated in Table 4, the RL FRAM functional areas align to S/RID functional areas with exception for the R&D and Experimental activities functional area. Because RL provides infrastructure it performs a number of functions not performed by the contractor in the Management System functional area.

Table 4. RL FRAM Functional Areas and Contractor S/RID

RL FRAM Functional Areas	S/RID Functional Area (FA)
Section 1 Accident Investigations Section 5 Directives/Requirements Management Section 10 External Affairs Section 11 Financial Management and Budgeting Section 14 Human Resources Section 22 Planning Section 23 Procurement Section 24 Property Management Section 28 Record Management Section 32 Employee Concern/Differing Prof. Opin Section 35 Regulation of Private Contractors Treating Tank Waste	FA.1 Management System
Section 25 Quality Assurance	FA.2 Quality Assurance
Section 2 Configuration Control	FA.3 Configuration Management
Section 30 Training and Qualifications	FA.4 Training & Qualifications
Section 6 Emergency Management	FA.5 Emergency Management
Section 29 Safeguards and Security Section 36 Classification/Declassification	FA.6 Safeguards and Security
Section 26 Radiation Protection	FA.11 Radiological Protection
Section 12 Fire Protection	FA.12 Fire Protection
Section 17 Nuclear Safety	FA.18 Nuclear Safety
Section 18 Occupational Safety and Health	FA.19 Occupational Safety and Health
Section 8 Environmental Protection	FA.20 Environmental Protection
Section 7 Engineering Design for Construction Projects	FA.7 Engineering Design
Section 3 Construction	FA.8 Construction
Section 20 Operations Section 13 Hoisting and Rigging Section 15 Lock and Tag Section 19 Occurrence Reporting Section 27 Readiness Reviews Section 34 Performance Indicators	FA.9 Operations
Section 16 Maintenance	FA.10 Maintenance
Section 21 Packaging and Transport	FA.13 Packaging and Transportation
Section 9 Environmental Restoration	FA.14 Environmental Restoration
Section 4 Decontamination and Decommissioning	FA.15 Decontamination and Decommissioning
Section 31 Waste Management	FA.16 Waste Management
Section 31 Waste Management	FA.17 R&D and Experimental Activities

2.2.5.2 Contractor Standards/Requirements Identification Document (S/RID)

The DOE approved S/RID for the RPP is the, *High Level Waste Storage Tank Farms/242-A Evaporator Standards/Requirements Identification Document*. The Tank Farm S/RID is listed in the Project Hanford Management Contract, DE-AC06-96RL 13200, Section J, Appendix C. A 1999 updated S/RID has been

conditionally approved by DOE in July, 1999. Upon final approval, this S/RID will replace the previous S/RID in the PHMC. Thus, the approved Tank Farm S/RID per this contract is the set of environment, safety, and health requirements applicable to the facility, work/activity or project and supersedes the list of applicable Directives in Section J, Appendix C. This approach is consistent with the requirements of the DEAR Clause 970.5204-78 (June 1997) as incorporated into the Project Hanford Management Contract, Modification MO32, Section H.14 *Laws, Regulations, and DOE Directives* on August 4, 1998. Several RL procedures apply to the review and approval of the S/RID and future updates as follows:

RLP 1380.5, *Validation of* Contractor *S/RID Assessments*, establishes the process for RL validation of the contractor's S/RID administrative and adherence assessment and noncompliance resolution process as required by the DOE S/RID Implementation instruction.

RLP 1380.4, *Review and Approval of Contractor S/RIDS and CSA Requests*, establishes the process for DOE review and approval of new or revised contractor S/RID and Compliance Schedule Approval (CSA) requests in accordance with the DOE Implementation Plan for DNFSB Recommendation 90-2.

RLP 1380.2, *Development and Maintenance*, establishes the process for the preparation and maintenance of the S/RID as required by RLID 1390.1, *Hanford Standards/Requirements Identification Documents*.

2.2.6 Hazard Controls Tailored To Work Being Performed

The terms and conditions that define DOE safety expectations for its contractors are set forth as contract requirements. DOE has identified safety requirements in Rules and DOE Orders and has developed a wide variety of associated Technical Standards, Guides, and Manuals. In addition, DOE encourages the use of national consensus technical standards. DOE approval of the contractor's integrated safety management description and oversight of its implementation are fundamental to DOE in satisfying its responsibilities for ensuring safety.

DOE and Fluor Daniel Hanford have signed an Authorization Agreement, as required by the Project Hanford Management Contract for Hazard Category 2 facilities, that identifies mutually agreed upon operation-specific controls, tailored to RPP facility hazards.

2.2.6.1 FEOSH

The *Occupational Safety and Health Program for Federal Employees at RL*, RLIP, 3790.1C supplements DOE Order, DOE O 440.1A, *Worker Protection for DOE Federal and Contractor Employees*. The principles of these directives are

implemented through the Program Desk Manual for Occupational Safety and Health (DOE-98-61).

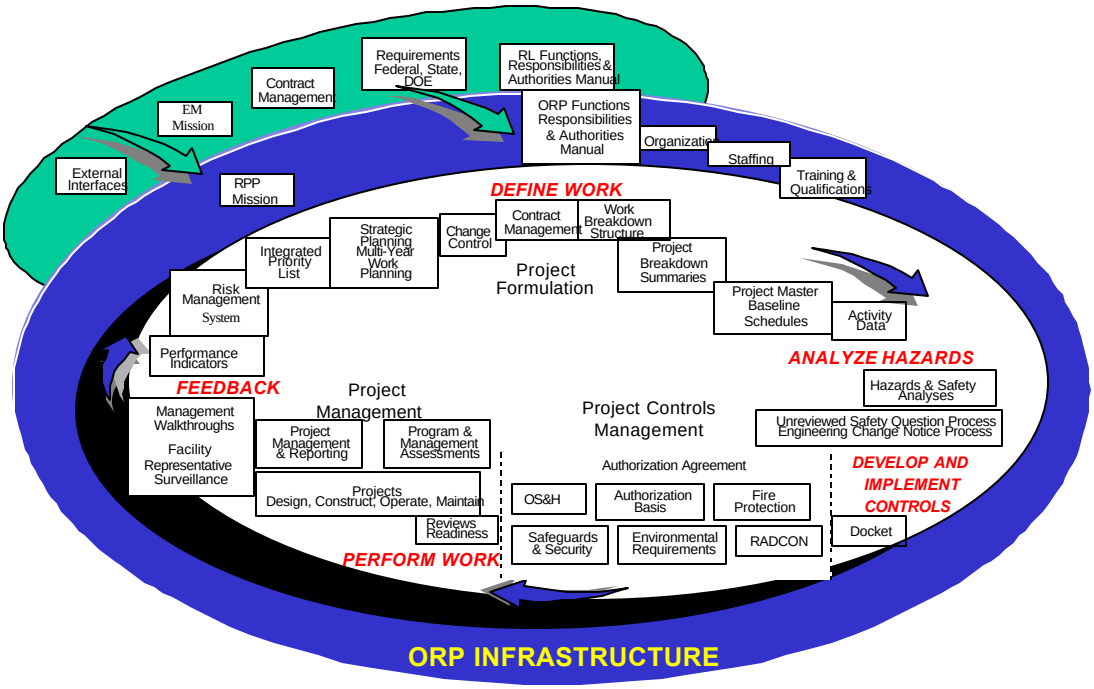
2.2.7 Operations Authorization

RPP contractor's safety management systems are required to have a process to confirm adequate preparation prior to authorizing the performance of work at the facility, project or activity level. DEAR 970.5204-2 (7) requires that DOE and the contractor establish and agree upon the conditions and requirements that must be satisfied for operations to be initiated or conducted. The conditions and requirements are included in the Project Hanford Management Contract and are therefore binding upon the contractor. The formality of the review process and the extent of documentation and level of authority for agreement are based on the hazard and complexity of the work being performed. DOE O 425.1, Startup and Restart of Nuclear Facilities, provides readiness guidance for RPP facilities. Refer to Sections 3.2.5 "Authorization Agreement" and 3.2.6 Authorization Envelope."

3.0 INTEGRATED SAFETY MANAGEMENT CORE FUNCTIONS FOR ORP PROJECTS

According to DOE Policy 450.4, DOE Safety Management System Policy, the five core safety management functions provide the necessary structure for any work activity that could potentially affect the public, the workers, and the environment. The functions are applied as a continuous cycle with the degree of rigor appropriate to address the type of work activity and the hazards involved. The five core functions as they apply to ORP Projects are indicated in Figure 7.

Figure 7: ORP ISM System Description and Infrastructure



3.1 DEFINE SCOPE OF WORK

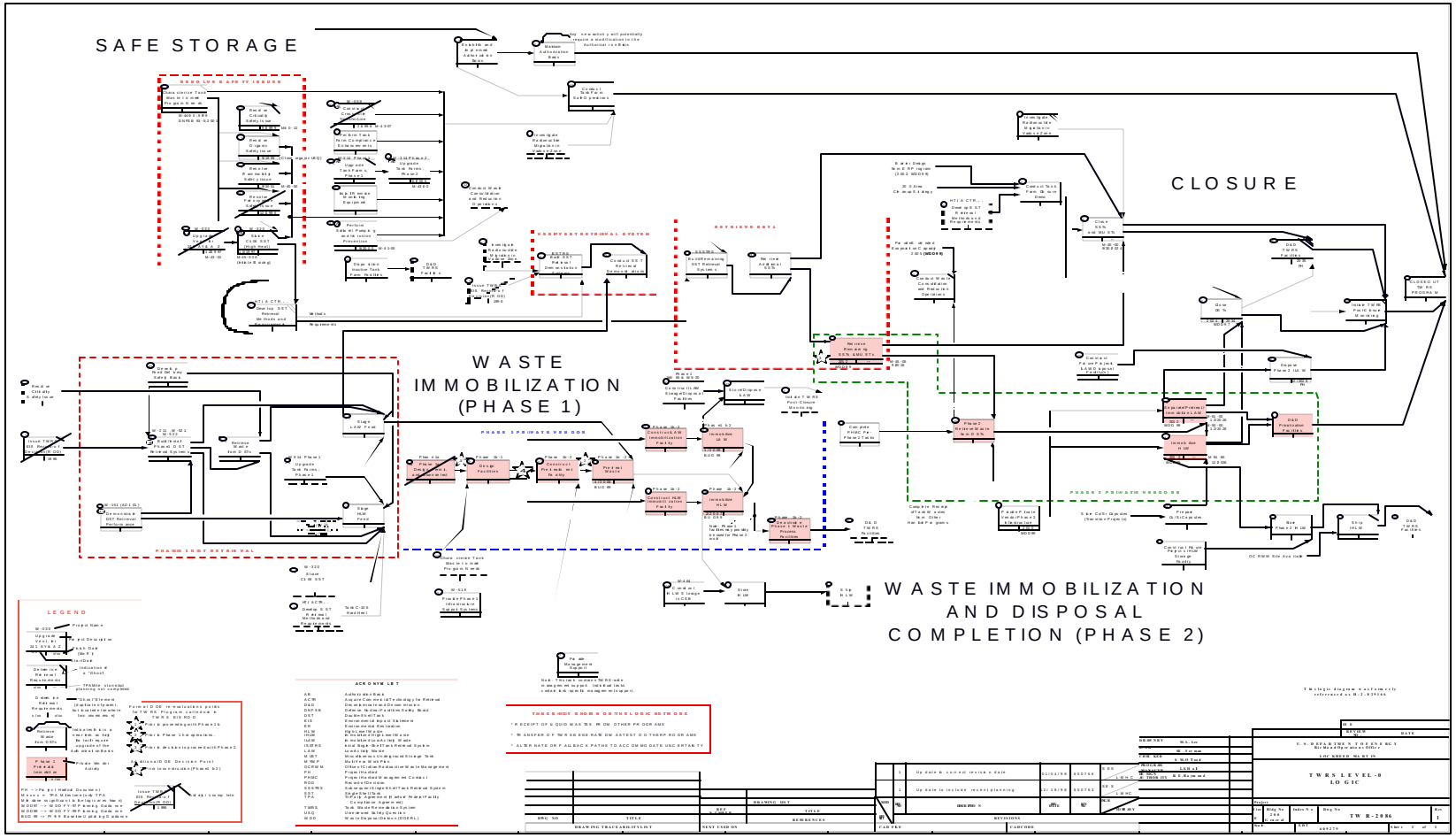
Missions are translated into work, expectations are set, tasks are identified and prioritized, and resources are defined. This section defines how ORP "Defines the Scope of Work."

3.1.1 ORP Strategic Planning: Level "0" Logic

The "0" Level Logic represents the first step in translating into work the ORP Mission as set forth in the Hanford Strategic Plan. As illustrated in Figure 8, the work in ORP is defined in four phases: (1) safe storage; (2) phase I immobilization; (3) phase 2 immobilization; and (4) closure. The level "0" Logic provides the basis for the ORP technical baseline which is incorporated into the Integrated Site Baseline. ORP Projects (e.g., W-058, construct Cross-Site Transfer Line) and major support (e.g., resolve organic safety issue) initiatives comprise the Level "0" Logic. Each project and major support activity is

subsequently decomposed to a Level “1” Logic. The Level “1” Logic is decomposed into Technical Basis Reviews (TBRs) which serve as the technical, risk, cost, and schedule basis for a TWRS Project. The TBR process is the central platform for the ORP ISM System (Figure 9).

Figure 8: Level "0" Logic

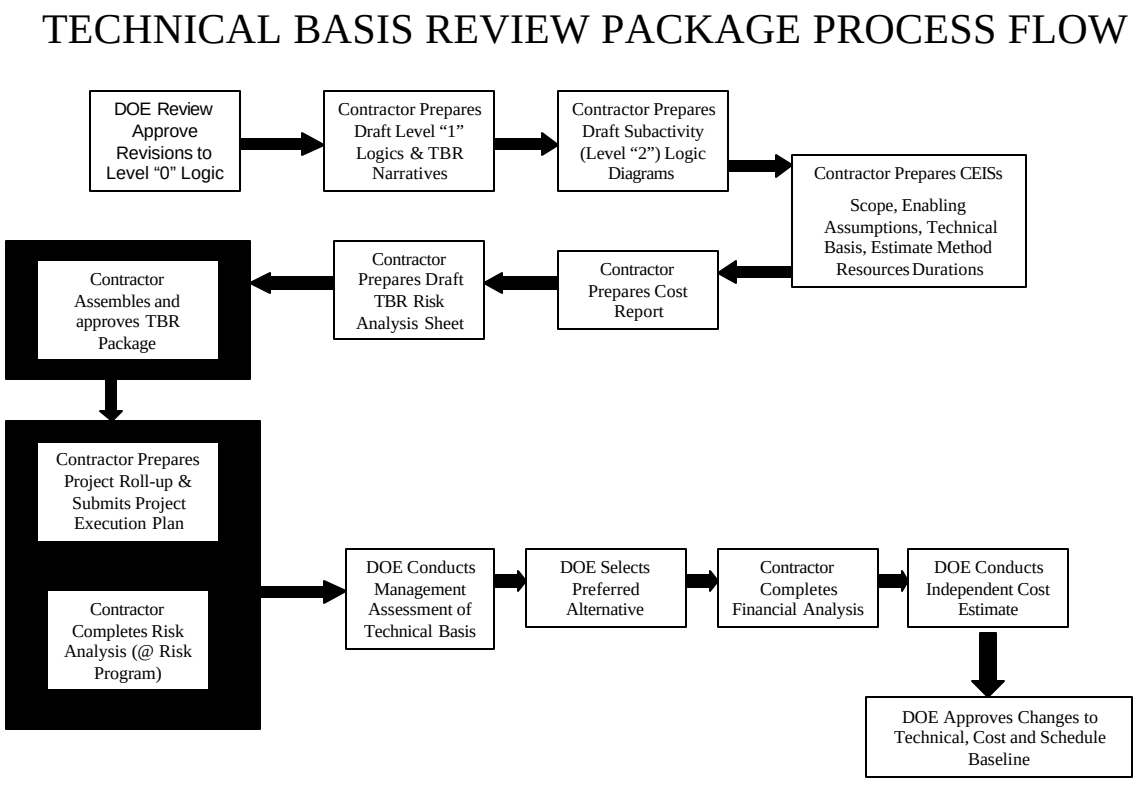


3.1.2 Technical Basis Review (TBR) Process

The Technical Basis Review (TBR) is illustrated in Figure 9. With DOE approval of the Level "0" Logic, the contractor prepares draft Level "1" Logics, Level "2" Subactivity Logics, and TBR narratives which serve as the basis for the preliminary cost estimates. Cost Estimate Input Sheets (CEIS) are prepared by technical subject matter experts for the TBR (groups of related activities). The CEISs include scope, enabling assumptions, technical basis, cost estimating method, resource estimates, and durations. From the CEISs and the narratives, the contracotr prepares an initial Cost Report and a Risk Analysis sheet. The technical, cost, risk, and schedule baseline analyses are integrated into a stand-alone TBR package.

Based on a graded approach, the project TBRs are integrated and rolled up into a Project Execution Plan. The contractor provides a Risk Analysis for the scenarios analyzed. This process is being applied to all RPP projects for all structured activities, including ES & H support activities.

Figure 9: Technical Basis Review (TBR) Process Flow



3.1.2.1 Project Technical, Cost and Schedule Baseline Reviews

ORP performs a review of the technical basis of the Project Execution Plan through a Management Assessment (MA). The MAs for project reviews typically rely on DOE Order, DOE O425.1, *Startup and Restart of Nuclear Facilities* and DOE O 430.1, *Life Cycle Asset Management* as the basis for review criteria (e.g., Single Shell Tank Interim Stabilization Project Management Assessment Review Plan).

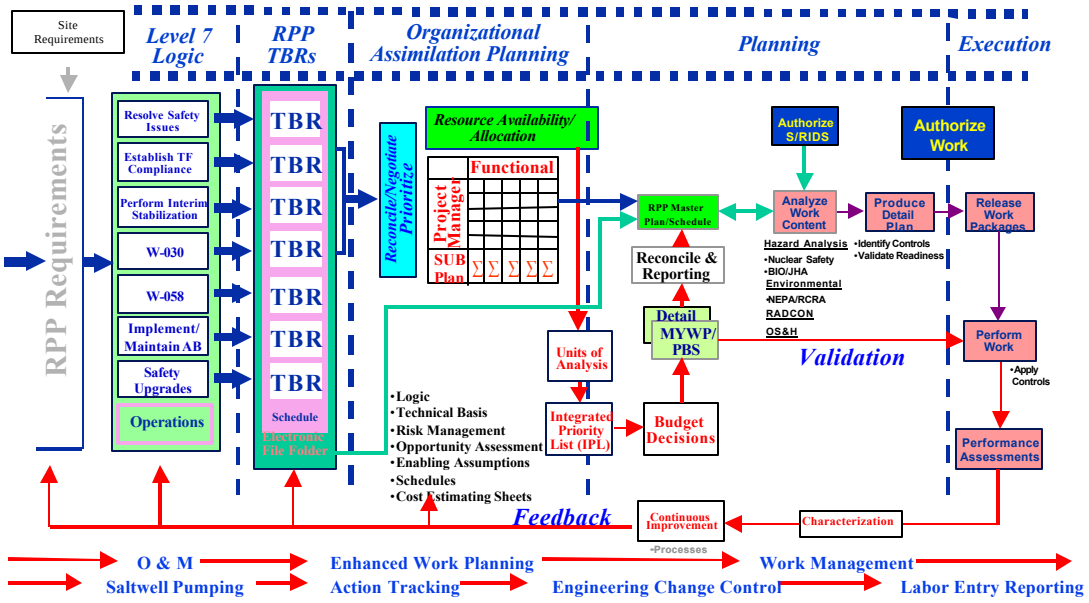
The ORP Review Team reviews the reference scenario and enabling assumptions and risks to determine if the approach is adequate from a DOE perspective. The Risk Analysis assigns risks to DOE as well as to the contractor being evaluated to determine whether they are acceptable to DOE. Through the review process, the MA Review Team routinely makes recommendations that lead to changes to the reference case.

Once the reference alternative has been agreed upon, the contractor prepares a Financial Analysis. DOE may elect to perform an Independent Cost Estimate, on a graded basis (e.g., Single Shell Tank Interim Stabilization Project Management Review Plan).

3.1.2.2 Organizational Assimilation Planning

Once TBRs have been produced for RPP projects, they are evaluated through a process of “Organizational Assimilation Planning” as illustrated in Figure 10. Organizational Assimilation Planning is the process through which ORP and the contractor enter into a process to reconcile priorities with resources. Economies of scale are gained where functions can serve multiple activities across TBRs and Projects. Economies are gained with respect to schedule, risk, and cost. The output of the Organizational Assimilation Planning Process is an Integrated Priority List.

Figure 10: TBR Process and Program Execution



3.1.2.3 Integrated Priority List

The Integrated Priority List (IPL) is derived using the same rules applied site wide. Each activity is evaluated with respect to a potential driver; (1) required by a compliance agreement; (2) required by a court order, settlement agreements, or consent decree; (3) required by federal environmental statute or regulation (includes permits); (4) required by state or local statute or regulation (includes permits); (5) required to comply with commitments to the Defense Nuclear Facilities Safety Board; (6) required by DOE Order – Environment, Safety, and Health; (7) required by DOE; (8) required by agreements in principle or agreement with Indian Nations; (9) required to meet a proposed Compliance Agreement; and (10) other essential management functions.

3.1.2.4 Multi-Year Work Plan and Project Baseline summary

As a part of the DOE Annual Planning Process, ORP management and staff review and approve contractor project plans which are integrated and documented in Project Baseline Summaries (PBSs). The PBS is the summary level document for the project. The PBS contains baseline information, risk information, and baseline performance measures. The Multi-Year Plan is the expression of the project baseline which projects cost, schedule, scope and expectations over the project life cycle.

3.2 ANALYZE HAZARDS

Hazards associated with the work are identified, analyzed, and categorized. Applicable standards and requirements are identified and agreed upon. Contractor personnel responsible for analyzing the hazards and developing, reviewing, or implementing the controls, have competence commensurate with their responsibilities. DOE roles and responsibilities are clearly defined to assure appropriate oversight and review of the analysis of hazards and the identification of controls. Personnel possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities.

3.2.1 ORP Environment, Safety, and Health Programs

ORP monitors the RPP Contractors' environmental, safety and health programs for compliance with the approved standard and requirements and for program effectiveness in relation to the RPP needs. Such programs include nuclear safety and licensing, criticality safety, radiological control, occupational health and safety, environmental protection, quality assurance, conduct of operations, process safety, chemical management systems, and requirements management.

Monitoring of these programs requires continuous interface with RL ESH organizations and RL line management organizations (e.g., Radiological Control Steering Committee) and RPP Contractor counterparts. Planning and funding needs for these programs are addressed through the Technical Baseline Review Process.

3.2.2 Characterization Project

On July 19, 1993, the Defense Nuclear Safety Board transmitted Recommendation 93-5 on the Hanford Waste Tank Characterization Studies to the DOE. The Recommendation noted that there was insufficient tank waste technical information to ensure that Hanford Site wastes could be safely stored, that associated operations could be conducted safely, that future disposal data requirements could be met. The DOE accepted the recommendation and issued *Recommendation 93-5 Implementation Plan*, DOE/RL-94-0001, Revision 1 to the Board to upgrade and expedite the tank waste characterization efforts. The approach documented in the implementation plan concentrates on actions necessary to ensure that wastes can be safely stored, that operations can be safely conducted, that timely characterization information for the tank waste Disposal Program can be obtained, and to better understand the safety related phenomena that underlie the tank waste safety issues.

To oversee the execution of the DOE implementation plan for Recommendation 93-5 and tank waste characterization efforts, DOE established a tank waste characterization project. Management of this project is factored into the Level "0" Logic (Figure 8) and includes integration of the Technical Baseline Review

Process (Figure 9) to address environmental and safety planning and funding needs. Recommendation 93-3 has been closed with the Defense Nuclear Facilities Safety Board.

3.2.3 Safety Issues Project

Multiple significant safety issues associated with the tank waste were identified in 1993. These issues include periodic release of flammable gases, potentially unstable organic and ferrocyanide compounds, release of potentially toxic vapors, nuclear criticality concerns and excessive heat generation. Some of the tanks experiencing these issues have been identified as Watch List Tanks requiring special controls as part of the Safety Measure Law (Public Law 101-510, Section 3137). Four of these safety issues involve unreviewed safety questions (USQs) which require additional environmental and safety documentation to complete safety upgrades and sampling activities.

As a result of these issues, a more aggressive and focused approach was taken by DOE that established six safety initiatives to resolve these issues and to close the associated USQs. To oversee Contractor management of the tank waste safety issues, DOE established corresponding safety issue projects, including tank farm worker safety and conduct of operations programs and tank waste characterization. Management of these projects is factored into the Logic (Figure 8) and includes integration of the Technical Baseline Review Process (figure 9) to address environmental and safety planning and funding needs. Continuous feedback on the safety issues was established through quarterly reports and provided to DOE's Office of Environmental Management. Several of the safety issues have been adequately resolved thus far, resulting in closure of the respective projects, e.g., the ferrocyanide and organic solvents safety issue/project.

3.2.4 Tank Advisory Panels

To support management of the tank safety issue projects, DOE established the *High-Level Radioactive Waste Tanks Advisory Panel* (TAP) in 1993. The TAP was charged with the task of reviewing issues related to the storage and ultimate remediation of high level radioactive waste currently stored in tanks at DOE facilities. DOE requested that the TAP work with appropriate DOE headquarters, field and contractor representatives to review technical issues related to safety and efficiency of waste storage and handling, retrieval and characterization of waste, treatment and immobilization of waste, and interim storage or final disposal. The TAP provides DOE with independent evaluations of the technical merits and risks involved in these activities.

The TAP membership represents a broad cross-section of industrial, academic, and DOE laboratory representatives with extensive experience in nuclear or chemical facility safety, design, construction, or operation.

The TAP meets periodically to review work in progress or contemporary items of importance to DOE. The majority of the TAP's work is conducted through sub-panels designed by the TAP chairman to address specific topical areas. Currently, two sub-panels are functioning to provide support to RL: (1) *Worker Safety and Health (WS & H) Sub-Panel*, and (2) the *Tank Waste Chemical Reactions Sub-Panel*. All TAP activities are addressed in charters that were cooperatively established by DOE and the Panel Chairpersons.

3.2.5 Authorization Agreement

The TWRS Project Authorization Agreement (AA) between the U.S. DOE, Richland Operations Office and Fluor Daniel Hanford, Inc. (FDH) was signed by both parties on July 24, 1998. The AA contains terms and conditions (controls and commitments) specific to the TWRS Project under which FDH is authorized to perform work. The AA became effective on September 22, 1998, and shall remain in effect until rescinded or revised by both parties or shall expire upon termination of the PHMC. The terms of the AA, if breached in manner by any party, shall not subject the breaching party to any liabilities, fines, or penalties not already imposed under the terms and conditions of the PHMC and current statutes, rules, regulations, and ordinances.

It is the intent of the AA to address those items of significant importance in establishing and supporting the TWRS Project Authorization Envelope, but the AA in no way alters the terms and conditions of the PHMC, Contract Number DE-AC06-96RL13200.

ORP determines through performance of management assessments and readiness reviews that the RPP Contractors are technically qualified in the activities authorized by the AA.

3.2.6 Authorization Envelope

The Authorization Envelope (AE) establishes the limits of safe operation for all RPP activities. These limits are based on documented design limitation, controls, regulatory constraints, and assumptions or commitments that are required based on identified hazards and environmental impact associated with TWRS Project facilities and operations. The documents listed in the following four subsections constitute the RPP Authorization Envelope. FDH or its subcontractors shall maintain the documents under a disciplined configuration management program and reviewed against these documents planned work at the RPP prior to authorization of associated work.

3.2.6.1 Nuclear Safety Authorization Basis

The Authorization Basis for Nuclear Safety consists of:

- "Tank Waste Remediation system Basis for Interim Operation (BIO), "HNF-SD-WM-BIO-001, Revision 0-D, and any approved amendment thereto;

- "Tanks Waste Remediation system Technical Safety Requirements (TSR), HNF-SD-WM-TSR-006, Revision 0-E, and any approved amendment thereto, and

- Additional safety documents included on the TWRS Authorization Basis List and all subsequently approved safety documents added to the Authorization Basis List.

3.2.6.2 Contractor Standards/Requirements Identification Document

The requirements basis consists of:

- "High Level Waste Storage Tank Farms/242 Evaporator Standards/ Requirements Identification Document (Tank Farm S/RID)", WHC-SC-MP-SRID-001, Revision 1-B, and all subsequently approved revisions.

3.2.6.3 Environmental Documentation

The Project environmental permits and National Environmental Policy Act (NEPA) documents consist of:

- "U.S. Department of Energy Record of Decision for the Tank Waste Remediation System, Hanford Site, Richland, Washington", 62 Federal Register (FR) 8693, and "Tank Waste Remediation System, Hanford Site, Richland, Washington, Final Environmental Impact Statement", DOE/EIS 0189.

- Environmental Permits obtained in the name of the RL or FDH that include provisions applicable to RPP Project facilities and/or operations;

- Resource Conservation and Recovery Act (RCRA) documents containing requirements applicable to RPP Project facilities and/or operations; and

- Voluntary compliance letters, notices of correction, notices of noncompliance, notices of violation, notices of penalty, administrative consent orders, or other legal documents issued by a responsible agency that contain requirements applicable to RPP facilities and/or operations, and subsequent approved revisions.

3.2.6.4 Health and Safety Plan

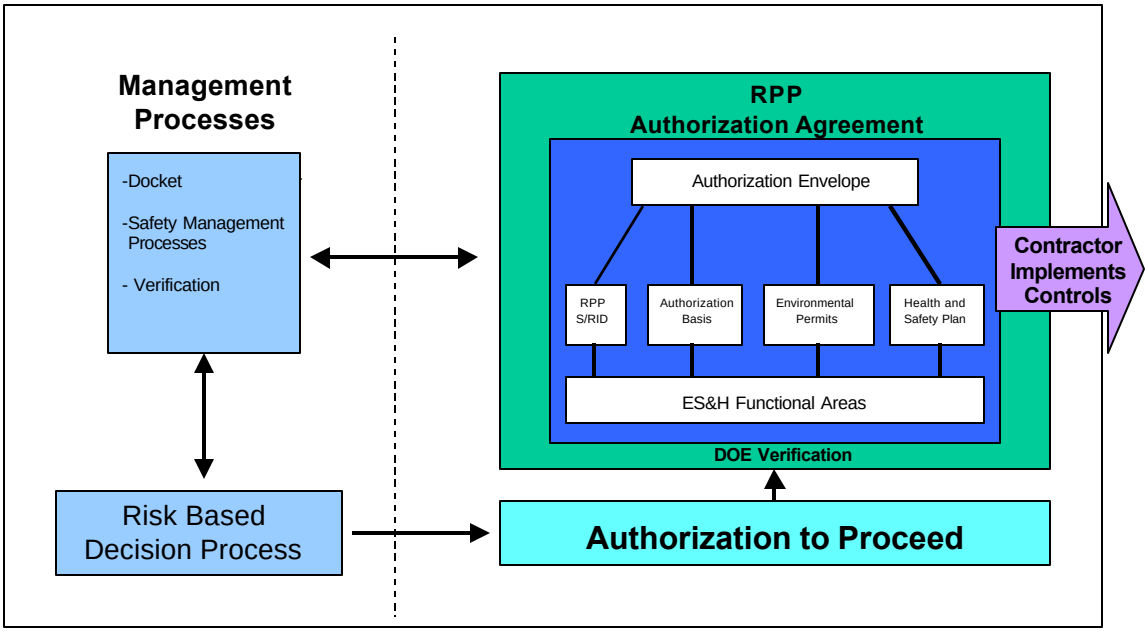
The "TWRS Health and Safety Plan (HASP)", WHC-SD-WM-HSP-002, Revision 2J, and all subsequent Contractor approved revisions is also with the RPP Authorization Envelope.

3.3 DEVELOP AND IMPLEMENT HAZARD CONTROLS

ORP roles and responsibilities are clearly defined to assure appropriate oversight and review of the analysis of hazards and the identification of controls. Personnel possess the experience, knowledge, skills, and abilities necessary to discharge their responsibilities.

The ORP RPP process is detailed in Figure 11 and the following sections.

Figure 11: ORP Hazard Control Development and Implementation Process



3.3.1 ORP Docket Process

ORP has implemented a "Docket" process similar to the docket process used by the U.S. Nuclear Regulatory Commission to manage the operating license for a nuclear facility. The ORP Docket manages entries of all Contractor requests to modify the RPP Authorization Basis (AB). The status of the ORP processing is monitored to assure that the upgrades are made in an expedient manner. The Docket lists all AB related changes or actions, the responsible organization, responsible individual, and tracking dates.

The Docket has also been recently updated to include the Authorization Agreement, the RPP S/RID and employee concerns as they relate to the RPP AB. ORP managers receive a copy of this Docket biweekly and the ORP Authorization Basis Manager uses the docket to track the AB activities.

3.3.2 Safety Management Processes

ORP conducted a continuous improvement review of its Safety Management Processes I keeping with the TWRS Action Plan, issued on April 30, 1998, in response to the "Review of the Federal Management of the Tank Waste Remediation System (TWRS) Project at DOE's Hanford, WA Site", issued on January 15, 1998. The Safety Management Process includes the following improvement activities:

- Conduct a Safety Management Workshop to establish additional actions necessary for improvement of the safety management process
- Establish a Safety Management Process Improvement Team (PIT) and plan
- Catalogue Safety issues and maintain it current
- Baseline current safety management processes and prototype new processes
- Create an Authorization Basis Development and Management Plan
- Develop RL Nuclear and Radiological Safety Policy and Procedures
- Perform a Progress Assessment

3.3.3 Verification of Controls

ORP routinely conducts field verification of controls addressed in the RPP Authorization Envelope through Management Assessments (e.g., RPP BIO and BIO Compensatory Measures). Verification of controls are also a routine element of the ORP Facility Representative Master Assessment Plan through Surveillances, Performance Assessments, and Management Assessments (refer Section 3.5).

3.3.4 Risk Based Decision Process

ORP has implemented a systematic approach to managing programmatic risks, i.e., risks with respect to cost, schedule, and technical performance. This approach is dependent upon the establishment of an integrated risk management process. The integrated program allows for the top down-bottom up flow of risk data and information. A by-product of this process is enhanced communication within ORP. The process has been used in Management Assessments of RPP Privatization evaluations of Ready-To-Proceed and in Single Shell Tank Interim Stabilization as an integral part of the RPP TBR Process.

3.3.5 Authorization Amendments

ORP processes contractor prepared engineering change notices (ECNs) and Authorization Basis Amendment Packages to amend the RPP Authorization Basis. The process is managed through the ORP Docket Process. All changes to the Authorization Basis are approved by the ORP and RL Managers.

3.4 PEFORM WORK WITHIN THE CONTROLS

Readiness is confirmed and work is performed safely. Contractor and DOE procedures assure that before operations are commenced or work is performed that (a) hazards for the work to be authorized have been analyzed, and (b) safety standards and requirements are identified, agreed upon, and implemented, such that there is adequate assurance that the public, workers, and environment are protected from adverse impacts from the hazards.

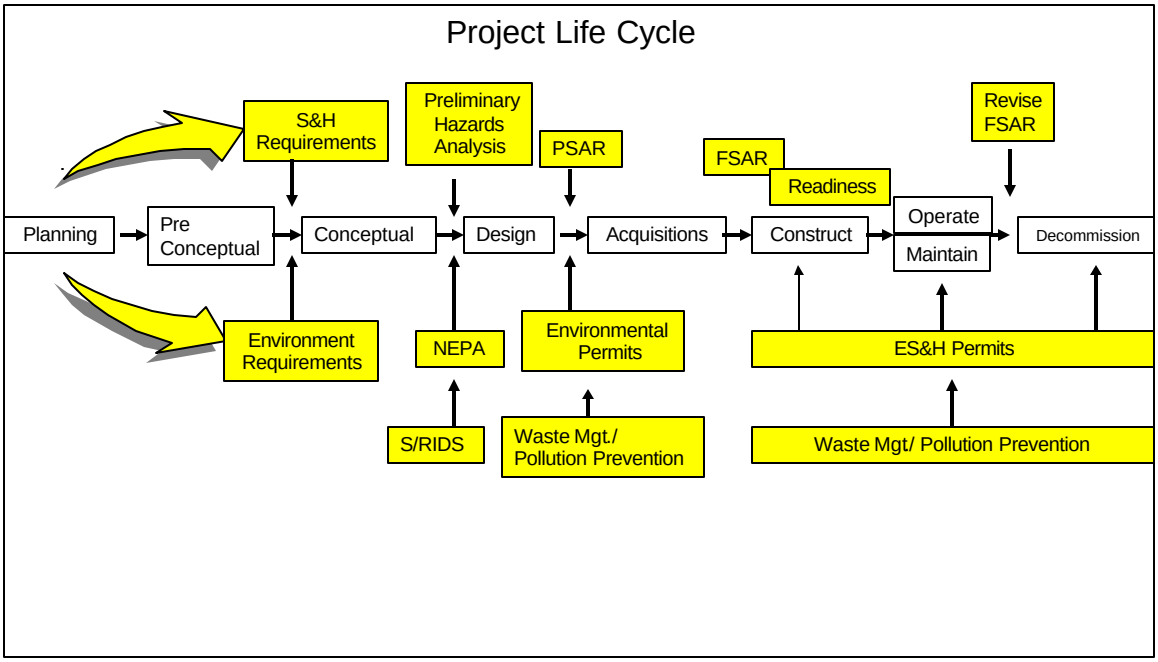
3.4.1 Project Control Process

The project control process is the collective set of management processes that are applied over the life-cycle of a project (cradle to grave) in accordance with DOE Order 430.1, *Life Cycle Asset* M*anagemen*t. Throughout the process, environment, safety and health activities are an integral part of project management as indicated in Figure 12. DOE Order 430.1 is designed to facilitate the DOE transition from a compliance-based management system to a performance based system.

ORP project managers rely on the following key tools to manage projects:

- DOE Order 430.1, *Life Cycle Asset Management*
- DOE Order 6430.1A, *General Design Criteria*
- DOE Order 4700, *Key Decision Process*
- DOE FM-20, *Good Practices Guide (GPG)*

Figure 12: Project Control Process and Project Life Cycle



The *Good Practices Guides* (refer to Table 5) focus upon the objectives of project management while avoiding, insofar as possible, prescribing methods, provides ORP project managers with 29 practices for managing activities within all phases of the project life cycle.

DOE Order 430.1, *Life Cycle Asset Management Implementation Guide (Draft)* provides a Life Cycle Asset Management Implementation Matrix that maps 57 key words (e.g., approval, baseline, baseline change control to the Good Practice Guide, the DOE RL source requirement document, further ORP guidance, and contractor source documents). The document also provides a summary of each of the Good Practice Guides and an LCAM traceability matrix.

Graded Approach: For cost-effective project management, ORP applies a graded approach to managing projects. Grading is commensurate with the project's scope, complexity, visibility, and strategic value. These grading factors are the basis for determining the degree to which elements of the project management system are applied. Certain requirements must be fulfilled without employing a graded approach. These include environmental regulations, safety requirements, and DOE Orders.

Change Control: Change control thresholds are prescribed for all programs other than Environmental Restoration. As an Environmental Restoration project, ORP change control thresholds shall be established by the program office in consultation with the project office on a case-by-case basis.

Table 5. Good Practice Guide Summary	
GPG-FM-001	Project Management Overview
GPG-FM-002	Critical Decision Criteria
GPG-FM-003	Engineering Tradeoff Studies
GPG-FM-004	RAM Planning (RMA Planning)
GPG-FM-005	Test and Evaluation
GPG-FM-006	Performance Analysis and Reporting
GPG-FM-007	Risk Analysis and Management
GPG-FM-008	Work Scope Planning
GPG-FM-009	Baseline Change Control
GPG-FM-010	Project Execution and Engineering Management Planning
GPG-FM-011	Value Management
GPG-FM-012	Configuration and Data Management
GPG-FM-014	Program/Project Relationships
GPG-FM-015	Project Reviews
GPG-FM-016	Baseline Development
GPG-FM-017	Quality Assurance
GPG-FM-019	Project Budget Process
GPG-FM-020	Performance Measurement
GPG-FM-021	Environmental Interfaces
GPG-FM-022	Public Participation
GPG-FM-024	Site Selection Process
GPG-FM-025	Waste Minimization/Pollution Prevention
GPG-FM-026	Project Closeout
GPG-FM-027	Human Factors Engineering
GPG-FM-028	Productivity Enhancement Tools
GPG-FM-030	Prioritization
GPG-FM-031	Maintenance
GPG-FM-032A	Life Cycle Cost
GPG-FM-33	Comprehensive Land-Use Planing Process Guide

3.4.1.1 Project Technical Baseline Validation

Once ORP provides the mission direction for a project, the contractor is directed to initiate detailed planning. The earliest stage of planning includes preliminary analyses of hazards and evaluation of environmental impacts versus alternatives for carrying out the mission (required by DOE 451.1A). Before ORP authorizes

large expenditures of funds for design work, the ORP project manager reviews the proposed project execution plan. In projects involving high risks, a Risk Analysis is requested from the contractor so that ORP can evaluate technical scenarios and options to the proposed technical baseline. The technical baseline review is conducted through a management assessment. Refer to GPG-FM-016, *Baseline Development*, and GPG-FM-015, *Project Reviews*.

3.4.1.2 Project Cost and Schedule Validation

Costs and schedules associated with the reference technical baseline are evaluated through a range of techniques including value engineering to analyze functions of systems, equipment, facilities, services, and supplies to achieve the essential functions at the lowest life-cycle cost consistent with required performance, reliability, availability, quality, and safety. Based on a graded approach, DOE may elect to conduct an Independent Cost Estimation (ICE) to validate the reasonableness of costs and schedules. Refer to GPG-FM-023A, *Life Cycle Costs*, GPG-FM-019, Budget Process, and GPG-FM-011, *Value Management*.

3.4.1.3 Work Authorization

Work is authorized at various phases in the life-cycle of the project. The four critical decision points include approval of mission needs, approval of the baseline, approval to start/remedial action, and at either completion or start of operations. Refer to the GPG-FM-002, *Critical Decision Process*, which provides detailed guidance for work authorization at each step.

3.4.1.4 Oversight of Work Performance

Project managers use electronic data bases to monitor cost and schedule on a daily basis, including the Financial Data System and HANDI 2000. Refer to ORP Desk Procedures #4, *Reviewing and Certifying for Invoices*, and #5, Completion of FY 98 *Performance Agreements*.

3.4.2 Readiness to Proceed

Readiness to proceed often falls under DOE Order 425.1, *Startup and Restart of Nuclear Facilities* and RLID 425.1, *Startup and Restart of Facilities*. Specifically, these directives are used in performing ORP's role in Operational Readiness Reviews and Readiness Assessments. In practice, the approach has been extended to several ORP Management Assessments (e.g., DOE/RL-97-72, *Determination of Readiness to Implement Tank Waste Remediation System Basis for Interim Operations*) where a high profile activity is neither a startup nor a restart, but the grading criteria justify a regimented determination of readiness. The criteria provided in these directives are often evaluated in the context of DOE Order 430.1, *Life-Cycle Asset Management*.

3.4.3 Project Life Cycle Asset Management

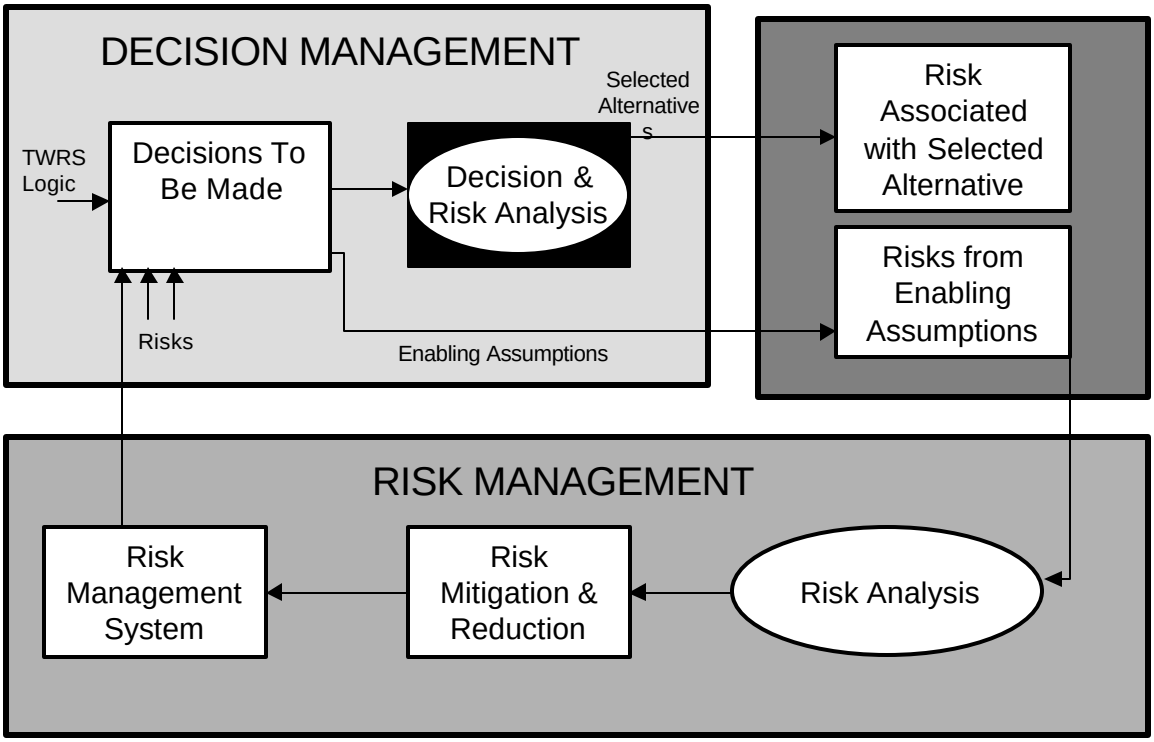
DOE Order 430.1, Life Cycle Asset Management is designed to establish a partnership between DOE and its contractors to plan, acquire, operate, maintain, and dispose of physical assets as valuable national resources. The directive requires that the affected activities be accomplished in a cost-effective manner and employ industry standards, a graded approach and performance objective.

3.4.4 Project Decision and Risk Management Process

ORP Project Managers use Good Practice Guide, GPG-FM-007, *Risk Analysis and Management*, which sets forth practical guidelines and concepts for the integration of risk analysis in project management. Project risk analysis is considered an ongoing, integrated process that addresses the risks associated with each element of a project. The first action is to determine what points in the project life-cycle will require risk analysis. The results of risk analysis are used by the project manager to develop performance objectives and measures and to specify status report formats. GPG-FM-007 provides screening questions to be used by project managers for risk identification and categorization including screens for:

- Technology uncertainties
- Time/schedule uncertainties
- Contractor capabilities
- Interface uncertainties
- Safety risks
- Environmental risks
- Regulatory risks
- Political visibility and public involvement
- Number of key participants
- Complexity
- Labor skills, availability, productivity
- Number of locations, site access, site ownership issues
- Funding/cost sharing
- Source term
- Quality requirements

Figure 13: ORP Decision Management and Risk Management



Decision Management and Risk Management provide continuous feedback to the Level "0" Logic. Figure 13 depicts this continuous process. For any significant management decision, the risk analysis process is invoked on a graded basis. For large project decisions, such as Interim Stabilization of Single Shell Tanks, the Contractor prepares a Risk Analysis. The DOE conducts a review of the enabling assumptions and scenarios evaluated in the Risk Analysis to determine if all reasonable scenarios have been considered and are reasonably portrayed, and whether all important assumptions have been taken into consideration. Once the Project Manager selects the optimal scenario, the risks attendant to the selected scenario and the associated enabling assumptions are evaluated with respect to cost and schedule as discussed above. The Risk Analysis evaluates opportunities for risk mitigation and risk reduction as described in Section 3.1.2, *RPP Technical Baseline Review Process*. Significant risks are incorporated in the RPP Risk Management system for monitoring.

ORP Management utilizes a risk based management process in making critical decisions affecting the office and/or project. A Critical Risk Management List is used to identify, track, and rate major risk areas to the program. These risks represent programmatic, business, interface control documents, technical and

ES&H. The ORP Management meets weekly to assess the posing risks and to track the appropriate actions for mitigation.

3.4.5 ORP Stop Work Policy

The RL manager has issued a stop work policy for the Hanford Site. The policy places responsibility and authority on every DOE employee to stop work immediately, without the fear of reprisal, when they are convinced a situation exists which places themselves, their co-worker (s), or the environment in danger. "Stop Work" is defined as stopping the specific task or activity that poses danger to human health and/or the environment. Refer also to RL 93-25, "Imminent Danger Response Actions."

ORP has adopted this "Stop Work" policy and will incorporate it into planned organization documents as they are developed.

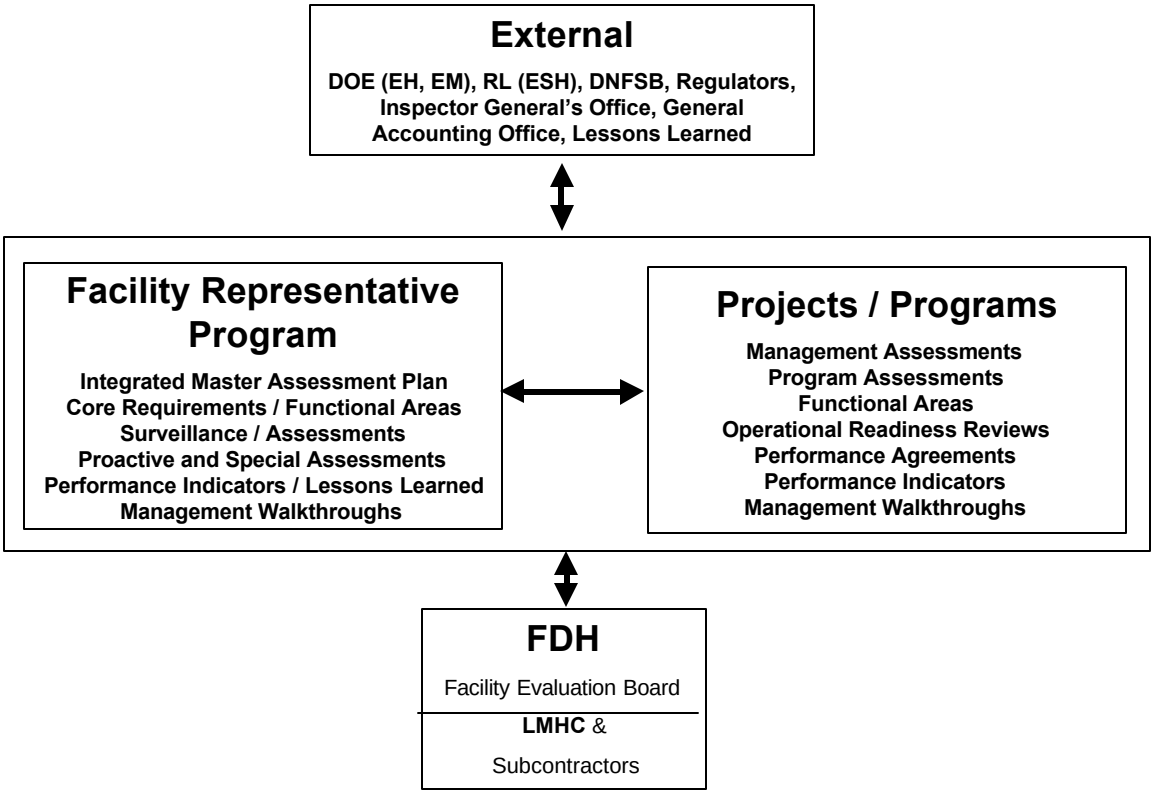
3.5 PROVIDE FEEDBACK TO IMPROVE THE SAFETY MANAGEMENT PROGRAM

Provide feedback and continuous improvement.

3.5.1 ORP Facility Representative Program

The DOE-ORP Facility Representative Program is the primary onsite point of contact (POC) between DOE and the operating contractor. The facility Representatives enhances ORP's knowledge of conditions at RPP facilities and provides direct observation of the operating contractor's actions, improving ORP's ability to respond quickly and effectively to facility problems. Figure 14 indicates functions and interfaces that the ORP Facility Representative Program (TOD) shares with ORP Projects/Programs, external interfaces, and the Contractor interface.

Figure 14: ORP Facility Representative Program Interfaces



3.5.1.1 Facility Representative Surveillance Programs

ORP Facility Representative surveillances are in accordance with Facility Representative Instruction, FRI-003, *Conduct of Surveillances*. FRI-003 requires that Operations Division Directors maintain a centralized file of all surveillance reports and assure that the performance of surveillances is in accordance with the Master Assessment Plan (FRI-005). These functions are centralized in the ORP Tank Farms Oversight Division (TOD).

The final surveillance reports are provided to contract management for action and to the Tank Farms Oversight (TOD) Director for records management.

The Master Assessment Schedule is coordinated with the contractor. The results of the Facility Representative surveillances, walkthroughs, performance assessments, and management assessments are provided to the contractor in a continuous feedback mode during the assessment process (e.g., kickoff/closeout meetings, daily briefs).

3.5.1.2 ORP Management Walkthroughs

The ORP Facility Representative program coordinates Management Walkthroughs of RPP facilities in accordance with Facility Representative Instruction, FRI-004, *Conduct of Walkthroughs*. FRI-004 requires that walkthroughs are conducted consistently by ORP management to provide an evaluation of facility status and contractor implementation of key safety and health programs. The walkthroughs are documented for contractor corrective action and for follow up surveillance or performance assessment activities.

The final surveillance reports are provided to contract management for action and to the Tank Farms Oversight Division Director for records.

3.5.1.3 ORP Management Assessments and Independent Assessments

ORP management assessments are conducted in coordination with the ORP Facility Representative program and as a planned improvement, and are targeted in FY 1999 to be incorporated into the ORP Master Assessment Plan. Management Assessments and Independent Assessments are conducted in accordance with 10 CFR 830.120 DOE Policy 450.5 *Line, Environment, Safety & Health Oversight* and DOE Order 5700.6C, *Quality Assurance*. The approach and criteria for conducting these assessments are covered by the DOE Implementation, DOE G 414.1-1, Implementation guide for Use with Independent and Management Assessment Requirements of 10 CFR Part 830.120 and DOE 5700.6C, Quality Assurance. The criteria as specified in 5700.6C are:

Criterion 9 – Management Assessment:

> *Management at all levels shall periodically assess the integrated quality assurance program and its performance. Problems that hinder the organization from achieving its objectives shall be identified and corrected.*

Criterion 10 – Independent Assessment:

> *Planned and periodic independent assessments shall be conducted to measure quality and process effectiveness and to promote improvement. The organization performing independent assessments shall have sufficient authority and freedom from the line organization to carry out its responsibilities*

A wide range of management assessments have been conducted and are currently being conducted in RPP, leading to substantial improvements in the ORP Authorization processes.

ORP has been and continues to conduct an in depth Independent Assessment of work processes including strategic planning, qualification, training, staffing, organizational interfaces, communication, and mission objectives in response to an independent report entitled "Review of the Federal Management of the Tank Waste Remediation System". Four mission-critical areas have been identified for process improvement:

- Safety management processes
- Definition and integration of RPP requirements into and integrated, Hanford Site program of vadose zone and groundwater management
- ORP organizational effectiveness
- DOE Headquarters oversight of ORP

Actions are tracked through the Corrective Action Management System (RLP 1000.1).

3.5.1.4 Occurrence Reporting

ORP Facility Representatives review and approve Occurrence Reports prepared by contractors in accordance with Facility Representative Instruction, FRI-011, *RL Facility Representative Program Occurrence Report Processing*. The objective is to assure that occurrence reports are processed in an expeditious manner.

Facility Representatives review information prepared by contractors regarding reportable occurrences for facilities under their cognizance with the time requirements of DOE O 232.1 and RLID 232.1 A, *Notification, Reporting, and Processing of Operations Information*. They assure that the occurrence reports are appropriately characterized and correctly address safety significance, root causes, generic implications, and corrective actions.

3.5.1.5 Performance Indicators

Performance indicators are implemented within ORP Operations and Facility Representative programs in accordance with DOE Order, DOE O 210.1, *Performance Indicators and Analysis of Operations Information*. Performance indicators are used as a tool to identify, monitor, and analyze data that measures the ES & H performance of RPP facilities, programs and organizations. These data are used to demonstrate improving or deteriorating performance relative to identified goals. ORP is currently conducting a study of Operations occurrences with respect to operations functional areas.

Performance Indicators are internal indicators used by the Facility Representative Program, Project Managers, and ORP safety professionals to maintain a disciplined approach to oversight and as a useful set of measures for determining thresholds for reporting to ORP management. Values for contractor

work activities indicators are managed and reported by the contractor to allow ORP staff to evaluate areas requiring corrective action or management attention. The Facility Representative Program posts charts based on performance indicators.

3.5.2 ORP Program Reviews

ORP conducts a monthly status review of the RPP Project to a Project baseline Summary level. Presentations are made by FDH for each of the ten RPP Projects:

- Tank Waste Characterization Project (RL-TW01)
- Tank Safety Issue Resolution Project (RL-TW02)
- Tank Farm Operations Project (RL-TW03)
- Retrieval Project (RL-TW04)
- Process Waste Support Project (RL-TW05)
- Privatization Phase I Project (RL-TW06
- Privatization Phase II Project (RL-TW07)
- Privatization Phase III Project (RL-TW08)
- Privatization Infrastructure (RL-TW09)
- RPP Management Support Project (RL-TW10)

FDH Project Managers present the following information on the status of each project:

- Cost and schedule baseline status
- Feedback from public and regulatory meetings
- Status of commitments
- Status of progress against performance agreements
- Status of safety performance
- Accomplishments

3.5.3 Lessons Learned

The DOE Lessons Learned Program is developed and managed in accordance with DOE Standard, DOE-STD-7501-95. DOE Sites are connected through the Internet to enable sharing of Lessons Learned. Lessons Learned are screened from a range of sources including the U.S. Nuclear Regulatory Commission, ORP, DOE Weekly Reports, and are sent to site points-of-contact (POCs). The objective of the program is that we can benefit from each other's innovations and mistakes. Lessons learned are a routine part of ORP Management Assessments, Surveillances, and Occurrence Reporting.

3.5.4 Accident Investigations

ORP maintains trained and qualified personnel for participation in Accident Investigations. The Accident Investigation Program is managed by the RL Performance Assessment Division. Accident Investigations are conducted in accordance with DOE Order, DOE 0225.1A, Accident Investigations. The purpose of the order is to prescribe the requirements for conducting investigations of certain accidents at DOE operations and sites. In the even of an accident, the senior onsite duty officer uses RLEP 3.13 to initiate the investigation.

3.5.5 Employee Concerns

DOE RL manages an Employee Concerns Program in accordance with RLID 5480.29, *RL Employee Concerns Program*, and has instituted a policy directive, RLPD 340.1, *Resolution of Differing Professional Views and Opinions: Policy and Procedures*. The policy directives encourage the expression of differing professional views and opinions by all levels of employees on technical issues relating to RL's mission, including environment, safety, and health. ORP utilizes this RL system which provides important feedback for ORP.

As an identified gap from the ISMS Phase I Verification, a comprehensive feedback system will be developed during the ORP transition phase. The Employee Concerns Program will be an integrated element in that feedback system.

4.0 IMPLEMENTATION OF INTEGRATED SAFETY MANAGEMENT

4.1 TANK FARMS: PRIORITY FACILITY

RPP was selected as a Priority Facility in the DOE Implementation Plan for the Defense Nuclear Facilities Safety Board Recommendation 95-2 for purposes of accelerating the implementation of the Integrated Safety Management System. Given resource limitations (expertise, funding, equipment) and external drivers, the DOE established a prioritization for implementing the safety management system at its facilities through the Implementation Plan. The following factors were used to prioritize sites: (1) hazard, (2) importance for long term DOE missions, and (3) existence of mature elements if an integrated safety management system (i.e., approved safety analysis report, technical safety requirements, and other safety documentation). Based on these considerations, the DOE chose K-Basins and Tank Farms at Hanford.

4.2 TWRS ISMS IMPLEMENTATION STRATEGY

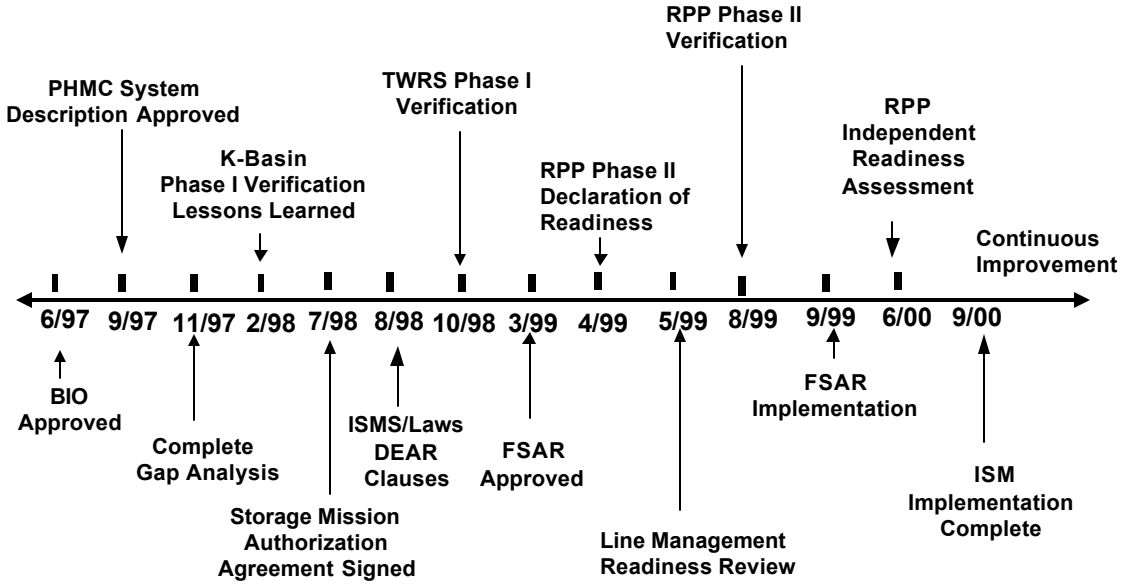
In developing the ORP ISM system description, a Phase I Gap Analysis was conducted to self-identify areas needing improvement as well as any significant gaps in the system. The Phase I Gap Analysis was conducted in three steps:

1) A crosswalk between the RL FRAM and the RL TWRS Staffing Analysis;
2) A crosswalk between the RL FRAM and the RL TWRS ISM system description, including the DOE Core Functions and Guiding Principles; and
3) A crosswalk between the RL FRAM and the Phase I Criteria for Approach Documents (CRADs) taken from the DOE ISMS Verification Team Leaders Handbook.

The Phase I Gap Analysis identified nine areas for improvement and one gap for RL TWRS. The gap addressed the lack of a defined, project wide, RL TWRS self assessment program. The areas for improvement addressed the following areas:

1) improve interface with DOE-HQ;
2) update the RL-TWRS staffing analysis to reflect the current organization;
3) update the RL FRAM to reflect the current organization and assigned roles and responsibilities;
4) complete definition of RL TWRS roles and responsibilities;
5) complete the RL or RL TWRS procedure for National Environmental Policy Act (NEPA) compliance oversight;
6) complete the RL TWRS Nuclear and Radiological Safety Policy and procedure;
7) include in the RL TWRS Docket tracking of all Authorization Envelope documentation;
8) complete the development of the RL TWRS risk management process and procedures; and
9) develop an issues resolution procedure.

Figure 15: RPP Significant Implementation Milestones



The significant milestones for the RPP ISM implementation are shown in Figure 15 including the Phase I and II Verifications. The Phase I Verification was conducted September 28-October 9, 1998, led by Carol L. Sohn, Director, Technical Support Division, RL-TWRS. The verification team was directed by the RL Manager to verify that the TWRS ISM system description was responsive to the DOE ISM policy and guidance. The team determined it was necessary to conduct the review for both the TWRS Contractor and RL-TWRS in order to better understand the details of integration and institutionalization. The institutionalization was verified through a review of the evidence provided by both the TWRS Contractor and RL-TWRS. The verification team reported the results of the verification in the *U.S. Department of Energy, Richland Operations Office Tank Waste Remediation System Integrated Safety Management System Phase I Verification Report, DOE/RL-98-73, Volumes I and II.* The results of the Phase I Verification are as follows:

DOE noteworthy practices

- staffing analysis augments FRAM alignment
- strong TWRS conduct of safety reviews

DOE opportunities for improvement

- integrate and formalize business systems
- no RL guidance on authorization agreements

Recommendations for DOE

- formalize business planning process
- formalize authorization agreement process
- complete corrective action (self assessment process) to improve RL feedback program

The Phase I Verification team concluded that RL-TWRS should proceed into Phase II implementation and that concerns from this review are to be incorporated into the Phase II implementation plan.

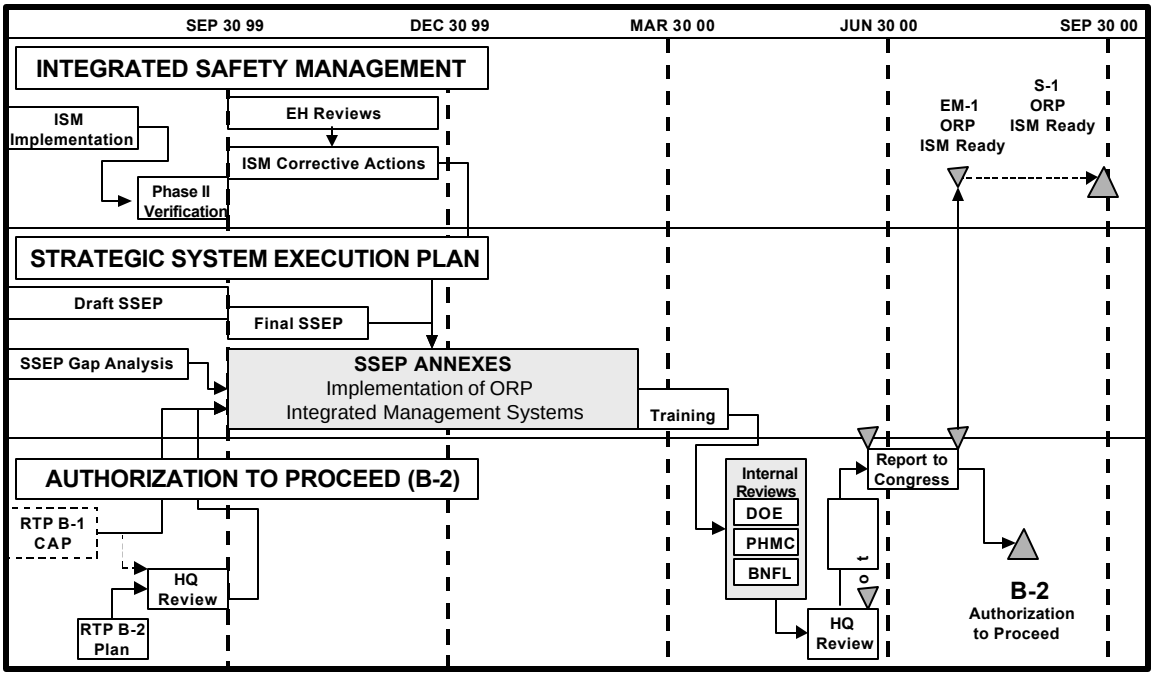
In preparation for the Phase II Verification, RL TWRS developed a corrective action plan (DOE/RL-98-81) to address the following:

1) concerns identified from the Phase I Verification;
2) remaining and new gaps for Phase II implementation; and
3) Phase II CRADs.

The objective of the corrective action plan is to complete or disposition the corrective actions and demonstrate evidence of completion prior to the commencement of the ISMS Phase II Verification.

During the Phase II implementation period, the Office of River Protection was established specifically to oversee the TWRS project, thereby assuming responsibilities for the on-going success of ISM implementation. Many of the business and management systems that were reviewed in the ISMS Phase I Verification are being modified to support the ORP transition and are being assessed through the development of the ORP Strategic System Execution Plan (SSEP). Improvement products or tasks not slated for completion prior to the Phase II Verification will be incorporated as corrective actions in the SSEP Gap Analysis. The SSEP will also be used to merge gaps identified from the RL TWRS Readiness to Proceed Phase I (B-1) assessment conducted in the spring of 1998. The final SSEP is planned to be completed by November 1999 and will represent the overall ORP integrated management systems, including ISM. The path forward for the development and implementation of the ORP integrated management systems is shown in Figure 16. SSEP implementation and completion of the associated corrective actions are planned by the end of March 1999 to support the Privatization Readiness to Proceed Phase II (B-2) Assessment in the spring of 1999 and the final report to Congress on the establishment of the ORP. It is intended that implementation of the SSEP will satisfy implementation of ISM. Thus, ORP intends to be able to demonstrate full ISM implementation before the end of FY-2000 as committed to the Secretary of the Department of Energy.

Figure 16: Path Forward



ATTACHMENT A

DEPARTMENT OF ENERGY
OFFICE OF RIVER PROTECTION
INTEGRATED SAFETY MANAGEMENT
SYSTEM DESCRIPTION

OFFICE OF RIVER PROTECTION
INTEGRATED SAFETY MANAGEMENT SYSTEM DESCRIPTION
INVENTORY OF REFERENCES
BY FUNCTIONAL AREA

Accident Investigations

- **DOE 0 225.1A**, U.S. Department of Energy, *Accident Investigations,* November 26, 1997
- **DOE O 232.1A**, U.S. Department of Energy, *Occurrence Reporting and Processing of Operations Information,* July, 21, 1997
- **DOE G 225.1A-1,** U.S. Department of Energy, *Implementation Guide for use with DOE Order 225.1A, Accident Investigations,* Rev.1, November 26,1997
- **RLID 232.1**, U.S. Department Of Energy, Richland Operations Office, *Occurrence Reporting and Processing of Operations Information,* January, 28, 1996
- **DOE-0223, RLEP 3.13**, U.S. Department of Energy, Richland Operations Office, *Emergency Plan Implementing Procedure, Emergency Operations Center, Accident Investigation/Emergency Response Evaluations,* Rev. 2, May 22, 1998
- *DOE-RL Accident Investigation Resources as of June 1998*
- *Accident Investigation Checklist*
- Type A Accident Investigation Board Report of the July 28, 1998 Fatality and Multiple Injuries Resulting from Release of Carbon Dioxide at Building 648, Test Reactor Area Idaho National Engineering and Environmental Laboratory.

Configuration Management

- **DOE-STD-1073-93-PT.1**, U.S. Department of Energy, *DOE Standard, Guide for Operational Configuration Management Program, Including the Adjunct Programs of Design Reconstitution and Material Condition and Aging Management, Parts I and II,* November 1993
- **GPG-FM-012**, U.S. Department of Energy, Office of Field Management, Office of Project and Fixed Asset Management, *Life Cycle Asset Management, Good Practice Guide, Configuration and Data Management*, April 1996
- **GPG-FM-009**, U.S. Department of Energy, Office of Field Management, Office of Project and Fixed Asset Management*, Life Cycle Asset* Management, Good Practice Guide, Baseline Change Control, May 28, 1996
- **RLP 5000.6A**, U.S. Department of Energy, Richland Operations Office Implementing Policy/Procedure, *RL Procedure Change Control*, March 8, 1994
- **RLIPP 1322.1B**, U.S. Department of Energy, Richland Operations Office Implementing Policy/Procedure, *RL Forms Management*, November 20, 1990

- **TWRS 09-03,** U.S. Department of Energy, Richland Operations Office, *Tank Waste Remediation System Management Integrating Procedure, Document Control,* April 13, 1994
- **TWRS 09-09,** U.S. Department of Energy, Richland Operations Office, *Tank Waste Remediation System Management Integrating Procedure, Document Review and Approval,* Rev. 1, April 13, 1994
- **FRI-001**, U.S. Department of Energy, Richland Operations Office*, RL Facility Representative Program Preparation, Revision & Control of Administrative Instructions,* April 30, 1997
- **HNF-1900**, Fluor Daniel Hanford, Inc**.,** *Tank Waste Remediation System Configuration Management Plan,* January 8, 1998

Construction

- **DOE 0 430.1,** U.S. Department of Energy, *Life Cycle Asset Management*, August 24, 1995
- **DOE-FM-20 Good Practice Guides**, U.S. Department of Energy, Office of Field Management, Office of Project and Fixed Asset Management*, Life Cycle Asset Management, Good Practice Guides*
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Classification/Declassification

Not applicable

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